Environmental Security: A Critical Examination and a Human-Centred Reformulation

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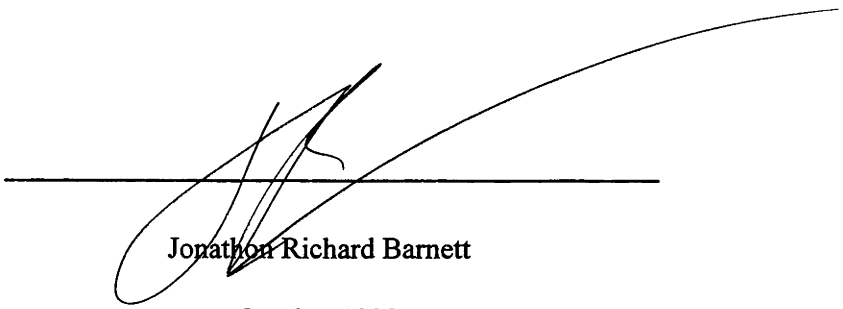
A thesis submitted for the degree of Doctor of Philosophy of The Australian National University

October 1998

Except where indicated otherwise, this thesis is entirely my own work.



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Acknowledgements

A long list of credits now follows. Stephen Dovers has borne the brunt of the supervision of this thesis, and I could not have hoped for a better supervisor. Steve has been generous with his time, patient, willing to listen, and a good friend. Graeme Cheeseman has also been great, and would also qualify for perfection were it not for his unfortunate choice of football teams. Lorraine Elliott bravely took on a belated supervision role, and has continually offered extremely helpful advice. Henry Nix has been wonderfully supportive as a supervisor and as Director of CRES. I thank him for allowing me the time to find a topic that interested me, for his financial support, and for his constructive comments on this thesis.

I would also like to thank Michael Carr who has been intellectually and alcoholically inspiring and entertaining; his comments on chapter 2 were invaluable. Thanks also to John Handmer for pouring over various bits and pieces even though he was on holiday - as he kept telling me!

Friends and family also warrant thanks. Mum and Dad have prepared me well for the world and their have maintained their confidence in me; siblings Cath, Matt and Hugh have been supportive. David and Jan Ellemor have been terrific proxy parents. I have enjoyed the good humour and lasting friendship of Fiona Ellis, Phil Gibbons, Urs Koenig, Doug Mills, Damean Posner, and Andre Zerger. Many others have also made the task of completing this thesis easier, including John Bear, Mick Common, Robin Connor, Fayen D'Evie, Jason Evans, George Fletoridis, Raphael Gomez, Phil Greaves, Aidan Heerdegan, Kate Jarman, Bert Jenkins, Jenny Kesteven, Alan Martyn, Mick McCarthy, Cathy Mobbs, Wendy Moss, Sara Norbury, Kirsten Parris, Dave Post, Maria Ryan, Dingle Smith, Dan Vickers, Michael Webber, Ian White, Zoe Wilson, and Bill Young. I would also like to thank the Queen's Trust for partly funding my trip to the U.K. in 1997-98.

Heidi Ellemor has continually made me laugh. She has helped me be an adult and an academic without losing my humour, compassion, and playfulness. Her love and friendship cannot be acknowledged in mere words.

Abstract

This thesis makes a critical examination of the concept 'environmental security'. It explores in depth, and in a manner consistent with critical theory, what has and has not been considered under the rubric of environmental security. In so doing, this thesis develops an account of environmental security informed by concerns for human security and positive peace. The implications of this for politics, policy, and governance are also considered.

A critical examination of environmental security is timely. The concept has become increasingly popular since the end of the cold war, but the exact meaning of the term is by no means clear. Despite this ambiguity, environmental security is now being used to inform policy. It is also gaining prominence as an alternative to existing concepts, such as sustainable development, which assist in the comprehension and resolution of environmental problems. The concept of environmental security is contested between political Realist/nation-centred approaches and human and ecologically-centred approaches. This thesis' critical examination finds that there are considerable limitations in the political Realist/nation-centred approaches, and it's reformulation of the concept draws on the human security approach and is informed by ecological principles. This reformulation offers a more robust environmental security concept which can better contest the meaning and practice of environmental security, and which provides a new perspective on environmental problems and policy.

This thesis begins with a discussion of environmental insecurity. It then outlines the particular critical and Green perspective which is used as the basis for subsequent analysis. Next it provides a macro-historical explanation of the causes of environmental insecurity. Having established these preliminary understandings necessary for a critical examination of environmental security, the thesis then examines the meaning of security and the political Realist approach which dominates. Next it examines attempts to redefine security, as it was from these that the concept of environmental security emerged. It then makes a detailed and critical examination of the popular idea that environmental degradation will lead to violent conflict. Following this, there is a critical examination of recent U.S. environmental security pronouncements and initiatives. The thesis then discusses the linkages between military activity and environmental degradation, and the

concept of ecological security is examined. The thesis argues that Realist, nation-centred and militarised approaches to environmental security serve the interests of a minority and undermine the needs of the majority of people. It argues that these approaches legitimate state inaction and obscure the need for fundamental social reform. On the basis of these limitations the thesis then reformulates the concept of environmental security to serve the interests of the environment, peace, and human security. Some implications of this reformulated concept for politics, policy, and governance are then considered.

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List of Acronyms

ADF	Australian Defence Force
ANU	Australian National University
AODRO	Australian Overseas Disaster Response Organisation
BHP	Broken Hill Proprietary Limited
CIA	Central Intelligence Agency (U.S.)
COGG	Commission on Global Governance
CO2	Carbon Dioxide
CRES	Centre for Resource and Environmental Studies
DOD	Department of Defense (U.S.)
DOE	Department of Energy (U.S.)
DPIE	Department of Primary Industries and Energy (Australia)
DUSD(ES)	Deputy Under Secretary of Defense (Environmental Security)
ENCOP	Environment and Conflict Project
EPA	Environment Protection Agency
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
HDI	Human Development Index
HEE	Human Energy Equivalent
ICDSI	Independent Commission on Disarmament and Security Issues
ICIDI	Independent Commission on International Development Issues
ICPD	International Conference on Population and Development
ICSA	International Center for Security Analysis
IPCC	International Panel on Climate Change
IPRA	International Peace Research Association
IR	International Relations
MAI	Multilateral Agreement on Investment
NAFTA	North American Free Trade Agreement
NATO	North Atlantic Treaty Organisation
NEI	Nuclear Engineering International
NGO	Non Governmental Organisation
NLC	Northern Lands Council
NSS	National Security Strategy
OKACOM	Okavango River Basin Commission

OPEC	Organisation of Petroleum Exporting Countries
SAP	Secure Australia Project
SEI	Strategic Environment Initiative
SERDP	Strategic Environmental Research and Development Program
SIPRI	Stockholm International Peace Research Institute
U.N.	United Nations
UNCED	United Nations Conference on Environment and Development
UNCHS	United Nations Conference on Human Settlements
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNHCR	United Nations High Commissioner for Refugees
U.S.	United States
WCED	World Commission on Environment and Development
WHO	World Health Organisation
WRI	World Resources Institute

Chapter 1. Introduction

1.1 Introduction

This thesis makes a critical examination of the concept 'environmental security'. It explores in depth, and in a manner consistent with critical theory, what has and has not been considered under the rubric of environmental security. In so doing, this thesis develops an account of environmental security which is informed by normative concerns for human security and positive peace. The policy relevance of such an account is also considered.

A critical examination of environmental security is timely. The concept has become increasingly popular since the end of the cold war, but the exact meaning of the term is by no means clear. The literature has evolved in an *ad hoc* manner with a variety of interpretations vying for credibility. This cacophony of discrepant interpretations has not prevented an environmental security policy discourse from emerging, although this discourse too, is far from clear about the meaning of environmental security. That environmental security is now informing policy makes the need for an examination of the concept all the more important. In addition, environmental security is gaining prominence as an alternative to existing concepts, such as sustainable development, which assist in the comprehension and resolution of environmental problems. That these existing approaches, regardless of how theoretically coherent and well intended, have failed (thus far) to lead to a resolution of environmental problems makes the development of an alternative concept potentially useful. At present there is little in the concept of environmental security to suggest much of a contribution in this respect. However, a critical examination leading to a more consistent formulation, such as this thesis intends, may well assist in the production of an environmental security concept that is better able to comprehend environmental problems and inform policy.

This thesis is motivated by the widely shared perception that environmental degradation poses fundamental problems for humanity. It is also motivated by an arguably no less widespread perception that throughout society there are unacceptable injustices or violences (insecurities) that degrade the lives of large numbers of human beings. These environmental and social problems are

interrelated, and this thesis locates itself at this intersection. The problems of environmental degradation and environmental insecurity are explicated in the following section of this chapter.

Understood in another way, the meta-problem of concern for this thesis is that of insecurity, particularly its environmental dimensions. Environmental security as others have understood it, and as this thesis understands it, is a manifestation of contemporary concerns (however varied) for degradation of the 'environment' combined with a concern for 'security' (however understood). In one fundamental, and ultimately inescapable sense, environmental security involves various interpretations of the conjunction of the words 'environment' and 'security'. In another sense, environmental security is part of the ongoing struggle to conceptualise, in a politically and policy relevant way, responses to environmental degradation. From yet another perspective, environmental security represents the attempt by certain theoreticians and practitioners of International Relations, the purveyors of 'security' *par excellence*, to come terms with environmental issues.[1] In this respect a study of environmental security is a study of global environmental politics. However, this thesis is not a study of International Relations as such, it draws on and synthesises a range of ideas from a range of disciplines, of which International Relations is but one (see chapter 2).

This thesis is located at the broad juncture where studies of environmental degradation intersect with peace studies. It is therefore very large in scope.[2] There are two dimensions to this; laterally, this thesis seeks to cover all the existing literature from which present approaches to environmental security can be discerned and potential reformulations developed; vertically, this study delves into a wide range of issues which are intimately related to environmental degradation and peace. This latter depth is necessary as any meaningful conceptualisation of environmental security requires some appreciation of the entirety of the modern world. As Falk has observed, there is an:

> (I)nterconnectedness of the threats to human existence, not only in the banal sense that everything is connected to everything else, but in the fundamental

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[1] When this thesis refers to 'International Relations' it is referring to the mainstream of the discipline. A reference to 'global politics' should be read as a reference to an emergent perspective which has a critical and more spatially unrestrained understanding of politics.

[2] Australian National University PhD dissertation guidelines stipulate that a thesis may not exceed 100,000 words. Unfortunately this has meant that certain related and interesting dimensions, particularly to Part I of this study, have been either relegated to footnotes or to appendices. The reader is not required to read these (of course), and the thesis should work in their absence. However, the reader is encouraged to peruse the footnotes and appendices if these seem of interest.

> respect that these issues cannot be successfully treated as separate and separable (Falk 1971: 98).

This is not by any means to say that this thesis comprehensively addresses the full gamut of problems in this late modern era, but it is to say that it is aware of these and it situates itself in this broader context.

This thesis differs from many theses in that it focuses on theories, discourses and concepts of environmental security rather than adopting a case study approach.[3] This entails taking risks, for "without risk-taking, the capacity for reflection and shared communication would lie dormant and the only rationality would be the bad economics, poor human relations and rotten morality" that seems to characterise so much of the modern world (Rees 1995: 285-6). Although this thesis does not study environmental security by way of case studies as many do, there is a small case study of Australian defence and environmental issues in chapter 8, and one of nuclear power in chapter 9. The preparation of this thesis did not involve conducting interviews, nor is there much analysis of public documents (other than in chapter 7). Instead this thesis seeks to assess the concept of environmental security itself, by exploring its historical antecedents, and by critically examining the literature. Such a comprehensive *critical* study has never been conducted, and is long overdue.[4] Indeed it might be argued that those empirical studies of environmental security rest on shaky conceptual foundations given that there is as yet no paradigmatic coherence to environmental security and, as this thesis will argue, most existing approaches to environmental security are undertheorised. This thesis therefore seeks to provide a coherent and consistent account of environmental security as a basis for further research and action.

In pursuing its goal, this thesis therefore does two things. It provides a sustained critical appraisal and reformulation of the concept of environmental security. In the course of this critical appraisal it offers insights into the interrelated concerns of peace and environmental degradation, as de Wilde notes: "it is politically correct to read an environmental security of the world". The concept of environmental security is therefore not only a specific concern but also

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[3] Recent PhD theses by Edwards (South Pacific), Magno (Spratley Islands) and Stoett (regimes for atomic energy, whaling and river management) each use case studies of environmental security. The findings of these are available in Edwards (1996), Magno (1997), and Stoett (1995).

[4] Dalby's work, however, makes a considerable inroad (see various references in the bibliography)

a vehicle for reflection on these broader concerns for peace and the environment. The structure of this thesis' inquiry is outlined in section 1.3 of this chapter.

1.2 The Problem(s): Environmental Degradation and Environmental Insecurity

Before proceeding it is necessary to talk a little about the problem that environmental security seeks to address and to establish certain terms and processes which underpin later analysis and discussion (this is also the function of Part I of this thesis). As shall be established in the introduction to Part II, exactly what is the problem is by no means clear, as Brock wryly observes, "environmental security .. is an answer. And what was the question?" (1996: 5).[5] It is therefore necessary to establish an understanding of the particular problem that this thesis considers to be the purview of environmental security. Although this runs the risk of imposing an *a priori* beginning to the critical examination aim of this thesis, there is little option but to establish this such that *some* notion of the substantive problem is established. In any event, because this thesis ultimately proposes it's *own* approach to environmental security, establishing the problem that concerns *it* - even if this is not the concern of other approaches - is warranted.

The problem is understood by this thesis to be that of *environmental insecurity*, itself a function of the more general problem of *environmental degradation*. This may seem axiomatic, but environmental insecurity frequently goes without mention in much of the literature. A couple of observations help set the context for discussing environmental degradation and the more specific problem of environmental insecurity:

> Humanity is approaching a crisis point with respect to the interlocking issues of population, environment, and development..... As human numbers increase, the potential for irreversible changes of far reaching magnitude also increases. Indicators of severe environmental stress include the growing loss of biodiversity, increasing greenhouse gas emissions, increasing deforestation worldwide, stratospheric ozone depletion, acid rain, loss of topsoil, and shortages of water, food, and fuel-wood in many parts of the world (Population Summit of the World's Scientific Academies 1993: 13 and 5).
>
> The world has become more polarised, and the gulf between the poor and rich of the world has widened even further.....The poorest 20% of the

[5] This absence of a problem statement says much about the difficulties of a critical examination of environmental security.

> world's people saw their share of global income decline from 2.3% to 1.4% in the past 30 years .....The assets of the world's 358 billionaires exceed the combined annual incomes of countries with 45% of the world's population ..... The gap in per capita income between the industrial and developing worlds tripled, from US$5,700 in 1960 to US$15,400 in 1993 (UNDP 1996: 2).

The 'environment' itself is a confusing term. Its basic meaning is "the total of the external conditions that surround an organism, community or object" (Goodall 1987: 155). Harvey notes that the environment "necessarily means such different things to different people, that in aggregate it encompasses quite literally everything there is ... the uses to which a word like environment is put prove instructive" (1996: 117). What is "instructive" about the use of the word 'environment' is the way in which this "fundamentally incoherent" concept is deployed to serve certain interests (Harvey 1996: 117). It is the commonality and universality of such a word that makes its capture desirable for particular interests. This ambiguity of meaning necessitates an explication of what this thesis means by 'environment'.

In this thesis 'environment' is understood as a common label for what is more accurately called 'the biosphere', defined as: "that part of the Earth's surface which includes living organisms, the remains of living organisms and the physical and chemical components of the total system necessary for, or involved in the process of life" and "which were in existence before human culture appeared on Earth" (Boyden et al 1990: 314 and 290).

There is an abundance of empirical data that points to increased environmental degradation and insecurity.[6] When regarding such figures the notion of biological and biophysical interdependence (ecology) must always be kept in mind. Focussing on any single problem limits appreciation of the broader processes of environmental degradation. Thus the Aristotelian observation that 'the sum of the parts does not equal the whole' (even assuming that we have a sum of parts) has is corresponding application in the understanding that "the whole of the insecurity domain is greater than any of its parts" (Borrow 1996: 436). The following observations about environmental degradation and environmental

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[6] As a rule all such evidence needs to be treated with caution as there is a high degree of knowledge uncertainty due to the more generic problems associated with the ecological sciences (see for example Dovers and Handmer 1992, and Peters 1991). The overwhelming focus in this section is on differences between nation-states. This should not be taken to infer that this thesis is unaware of discrepancies that occur within individual nation-states, or indeed of the differences between people.

insecurity should be seen, then, not only as problems in their own right, but also as signs pointing to a far larger problem.

1.2.1 Environmental degradation

Environmental degradation is understood by this thesis to be *the processes by which the life sustaining functions of the biosphere are disturbed.* So when this thesis refers to the problem of environmental degradation it is referring to the totality of a wide range of interdependent processes occurring at a range of scales and in different places to differing degrees: "the ecological problematique is complicated and multifaceted" (Falk et al 1982a: 435). These processes include, among others, atmospheric pollution and climate change, biodiversity loss, soil loss, salinisation and acidification of soils and water, fisheries depletion, depletion of forests and timber, marine pollution, and contamination of plants and animals by synthetic chemicals and radioactive substances (for a typology see Dovers 1990).

Harvey considers that there is "a rough convention" in society which loosely understands environmental issues to be: "the relationship between human activity and well-being ... and a) the condition or health of the biome or ecosystem which supports human life, b) specific qualities of air, water, soil and landscapes, and c) the quantities and qualities of the natural resource base for human activity" (1996: 118). This points to two basic differences in understanding the problem of environmental degradation. First, there is what McMichael refers to as the *sources* problem (Harvey's part 'c' above) which arises when the supply of natural resources of direct use to humans decreases, and resource scarcities occur (McMichael 1993: 47). This supply of materials problem is fundamental to Malthusian theories and was (perhaps mistakenly) the most popularly interpreted message of *The Limits to Growth* (Meadows et al 1972). This aspect is for the most part economistic rather than ecological as it concerns the scarcity of natural capital contributions to the economy. This narrow understanding makes possible Julian Simon's insistence that environmental problems are resolvable through market mechanisms, which is to say that an environmental problem is really an *economic* problem (Simon 1981, Simon and Kahn 1984).

There is another, more complex aspect to the problem of environmental degradation, which McMichael refers to as "the overloading of planetary *sinks*" (McMichael 1993: 47). This refers to the decreasing capacity of the planet's

natural systems to absorb wastes. O'Riordan and Rayner describe this 'sinks' aspect:

> Possibly the least understood feature of global environmental change is the cumulative biogeochemical impact of persistent and toxic micropollutants which emanate from dispersed (and uncontrollable) sources via concentrations at or below the level of detection. These can accumulate unpredictably (chaotically) in air and ocean currents, in rainfall, in soil-forming processes, and through food chains in such a way as to become catastrophically hazardous (O'Riordan and Rayner 1991: 98).

This is arguably the more critical environmental issue and is less easily understood and less widely recognised, particularly outside the natural sciences. The overloading of sinks is related to the notion of a threshold beyond which essential life support systems are no longer able to support certain forms of life - including our own. This is an *ecological* understanding of the problem of environmental degradation. There is, however, considerable overlap between these sources and sinks aspects.

The assertion that there is increasing environmental degradation is widespread and draws on a solid base of scientific understanding. The quotes from the Population Summit which opened this section are the consensus of fifty-eight national scientific academies, and so refutations of its findings are difficult to maintain, at least on scientific grounds. Similarly the International Panel on Climate Change (IPCC) incorporates a vast number of core contributors and an even vaster number of reviewers in the production of its findings about climate change, meaning that those who dispute the IPCC's findings are a very small minority, however audible.[7] In 1995 the IPCC stated that "greenhouse gas concentrations have continued to increase (since pre-industrial times) ... climate has changed over the past century ... the balance of evidence suggests a discernible human influence on global climate ... climate is expected to change in the future .. [but] ... there are still many uncertainties" (IPCC 1995). To invoke the findings of the Population Summit and the IPCC is not to suggest that their findings are 'factual', but it does suggest that in as much as scientists agree, scientists agree that there is a problem of environmental degradation.

It is thought that some 40% of the earth's surface used to be covered with forests, whereas this figure is now 27% and falling, most of this loss has occurred since 1950 (Brown et al 1996). Canada, for example, is thought to be losing up to

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[7] The IPCC is arguably a historically unique process for science given the vast number of contributors and the seemingly strong degree of consensus underlying its findings.

a million hectares of forest cover per annum, and Siberia 4 million hectares per annum (Brown et al 1996). Deforestation strongly implies declining biodiversity, although figures for this are difficult to produce as only 13% of an estimated 13 million species have been scientifically described (UNEP 1997). Tropical rainforests cover only 7% of the earth's surface yet contain an estimated 50% of plant and animal species, so their decline accounts for large losses of biodiversity (Seager 1995). Every year some 20 million hectares of tropical rainforests are grossly degraded or completely destroyed (UNDP 1996). It is thought that up to fifty plant species become extinct every day (Seager 1995), that 37% of North America's inland fish species are either extinct or at risk of extinction, and that in Europe over 40% of freshwater fish species face possible extinction (Brown et al 1996).[8]

Coastal flora is also being rapidly cleared. In Australia for example, 17% of Moreton Bay's mangrove stands have been removed, and in Westernport Bay 85% of the area of seagrasses has been lost (Commonwealth of Australia 1996a). In Latin America some 50% of coastal mangroves are affected by forestry and aquaculture (UNEP 1997), and in Thailand aquaculture has destroyed 87% of mangrove stands (Seager 1995). Degradation of coastal environments is contributing to depletion of many of the world's fisheries. Up to 60% of the world's marine fisheries are 'heavily exploited' (UNEP 1997). The total marine fish catch throughout the world more than quadrupled between 1950 and 1990 (WRI 1993). In excess of 3 billion people rely in some manner on coastal and marine habitats for food and other needs, so it is disturbing that third of the world's coastal regions are at risk from degradation (UNEP 1997).

Land degradation is an important component of the overall processes of environmental degradation. Deforestation, agriculture and overgrazing are the three principal sources of land degradation. It is thought that some 20% of Asia, 22% of Africa and 25% of central America suffers from land degradation (WRI 1992); that 1 billion people in 110 countries are at risk from the impacts of the degradation of dry-lands (UNEP 1997); and that 200 million people in industrialising countries are severely affected by desertification (UNDP 1996). Land degradation contributes to decreased agricultural productivity, despite

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[8] The introduction of new or non-endemic species is also a significant cause of biodiversity loss. In Australia there are between 1,500 and 2,000 introduced plant species, and introduced species now account for 31% of all plant species found in Tasmania (Commonwealth of Australia 1992a).

increased use of fertilisers. Brown (1996) notes that overall, grain harvests are gradually declining, whilst population numbers continue to increase. Africa in 1994 was producing 27% less food than in 1967 (Seager 1995), and in 1995 the world grain harvest was less than world consumption; reserves are thus gradually diminishing (Brown et al 1996). Some 95% of the world's food is supplied by only thirty crops, four of which - wheat, rice, maize and potato - dominate (Seager 1995). Worldwide the price of basic foodstuffs is increasing. More than 800 million people do not get enough to eat and 500 million people are chronically malnourished (UNDP 1996). Malnourishment is most prevalent in Africa, West Asia and South America, and overnourishment is most prevalent in North America and Europe (Seager 1995).

Atmospheric pollutants are also a significant problem. All the world's major cities suffer from poor air quality (UNEP 1997). There is evidence to suggest that that skin cancers are increasing in southern latitudes due to depletion of the stratospheric ozone layer (McMichael 1993, Seager 1995). Ozone depletion has increased despite considerable action to reduce the use of ozone depleting substances in industrialised countries (UNEP 1997).[9] In 1995 worldwide carbon emissions reached an all time high of nearly 6.1 billion tons, reflecting a worldwide increase in the burning of atmospherically damaging fossil fuels for energy (Brown et al 1996).

The most large scale atmospheric problem is that of global warming, or more accurately - climate change. As discussed earlier, the evidence suggests a warming of climate, likely increased climatic variability, and "average sea level is expected to rise" (IPCC 1995). 1995 was the warmest year since records began to be kept 130 years ago, and the ten warmest years on record have occurred since 1980 (Brown et al 1996). Global warming is of particular concern to industrialising countries as these tend to have less effective adaptive mechanisms, and so are less resilient to problems arising from climatic variability and rising

[9] The difficulty of referring to 'rich' and 'poor' countries has been resolved by calling these 'industrialised' and 'industrialising' countries. This seeks to resolve the geographic-discursive distanciation that transpires when the words 'third world' are used (is it not this world?), and the value assumptions made when the words 'developed' and 'developing' are used (greater wealth is not necessarily a positive 'development'). Having said this, this thesis is aware that the use of industrialised/industrialising is not without its own complications and is certainly not connotation free, however the suggestion is that these terms are more about describing an economic state rather than implying a value judgement about the validity of ways of living.

sea-levels. Between 1989 and 1995 there were 13 weather related disasters throughout the world which individually caused in excess of US$3 billion in damages, and which collectively caused US$106.4 billion in damages (Flavin 1996). Even the adaptive mechanisms of the industrialised countries are faltering; insurance claims for weather related disasters increased from $16 billion between 1980-1990, to $48 billion between 1990-1995 (Brown et al 1996). As a result, many insurance companies are incrementally reviewing policies that insure against the risk of weather related losses (Brown et al 1996).

Worldwide population numbers are increasing, as is the number of people living in urban areas. In 1995 the world's population increased by 87 million people, most of whom were born in industrialising countries (Brown et al 1996). Growing numbers of people in conjunction with environmental degradation contributes to a rising numbers of refugees - an important aspect of environmental insecurity. In 1995 the United Nations registered 4.4 million new refugees, taking the world total to 27.4 million. One positive aspect, however, is that the overall rate of population growth is slowly declining, and in many areas population has already stabilised or is nearing zero growth (Brown et al 1996).

There are other positive indicators. Whilst in absolute numbers the use of renewable energy technologies is very small, in relative terms their implementation is increasing rapidly. In 1995 sales of energy efficient fluorescent light bulbs increased by 15%, shipments of photovoltaic cells increased by 17%, and the installation of wind turbines increased by 33% (Brown et al 1996). The growth in wind generated power is likely to outstrip the growth in nuclear power by the turn of the century (Brown et al 1996). Particularly striking is that while automobile production increased only slightly in 1995 to 36 million units, bicycle production increased substantially to 114 million units; this augurs well for the future of sustainable transport. Awareness of the risks imposed by high levels of fertiliser use is slowly spreading, so that between 1989 and 1992 world fertiliser use declined by 15 million tons (Seager 1995). There are now in operation a large number of international treaties that seek to protect the environment. In 1992 160 states signed the Convention on Biological Diversity, and 163 states signed the Framework Convention on Climate Change. This represents a significant increase in support from twenty years ago when only 82 states signed the 1972 London Dumping Convention (Seager 1995). The protection of areas of environmental significance is increasing. The percentage of all nations' areas under protection

increased from 1.6% in 1972 to 4.9% in 1990 (World Bank 1992). Finally, in industrialised countries energy use is becoming more efficient. In 1965 166 kilograms of oil equivalent energy were needed to produce US$100 of GDP, whereas in 1991 the figure was 26 Kg of oil equivalent energy (UNDP 1996).

1.2.2 Environmental insecurity

The problem of environmental insecurity is a more specific aspect of this broader problem of environmental degradation. Environmental insecurity is defined here as *the vulnerability of people to the effects of environmental degradation*. So environmental insecurity is more than the physical processes of environmental degradation, it includes the way this degradation affects the welfare of human beings. Environmental insecurity is therefore understood as a social problem, both for the way it impacts upon human welfare, and because the meta-problem of environmental degradation is a product of human behaviour. At its deepest level this understanding of the problem is developed throughout this thesis, and the evolution of environmental insecurity will be considered in some detail in chapter 3.

Environmental insecurity is very much about risk. In the first instance a risk to biospheric integrity is a risk to human health. Some infectious diseases, including traditional diseases such as tuberculosis and malaria, have become more prevalent due to continued environmental degradation. In 1993 tuberculosis and malaria together accounted for 4.7 million deaths (Platt 1996). At the same time acute respiratory infections claimed 4.1 million lives, and diarrhoeal diseases 3 million (mostly young) lives (Platt 1996). Further, in 1993 some 200 million people were thought to suffer from schistosomiasis, 4.3 million from whooping cough, and up to 500 million from malaria (Platt 1996). In 1995 the recorded number of HIV infections increased by 4.7 million, and in 1993 there were an estimated 700,000 HIV related deaths (Platt 1996). Whilst there is much speculation about the origin of AIDS, McMichael observes that, like most infectious diseases, it arises because "changes in human demography, culture and technological practice create ecological opportunities for microbes" (1993: 282, see also Pirages 1996). It is also suggested that throughout the world there are now some 20,000 pesticide related deaths per year (Brown et al 1996).

Water scarcity and poor water quality are arguably the most important factors in environmental insecurity. It is estimated that by the year 2000 one

quarter of the Earth's land surface will face persistent water shortages, but already there are some 1.7 billion people, or roughly 30% of the world's population, who are without a reliable supply of safe water (UNEP 1997). Water borne diseases are still the largest cause of human illness and death worldwide, causing some 25,000 deaths per day (UNEP 1997). The widespread use of fertilisers affects long term agricultural productivity and, through run-off, severely deteriorates water quality.

It is human behaviour that contributes to the risk that the biosphere may be unable to sustain some life forms and some ways of living. The United Nations Conference on Environment and Development, and *Our Common Future* - both of which express the consensus of the vast majority of nation-states - have both argued that it is human insecurities such as poverty and inequality which are at the root of many environmental changes (WCED 1987, UNCED 1993). Put another way: human vulnerability generates environmental insecurity, which in turn exacerbates human vulnerability. In this sense 'insecurity' more generally cannot be too stringently distinguished from environmental insecurity. So, as we shall see more fully in chapter 3, environmental insecurity is complex in both material and conceptual ways.

Conventional wisdom has it that a range of seemingly unrelated human vulnerabilities cause environmental insecurity. Such vulnerabilities apply most fundamentally to women. Women are more vulnerable (than men) to physical, economic and psychological abuse in most if not all modern societies. Worldwide, between 85 and 114 million females have been subjected to genital mutilation, and surveys in ten countries have shown that between 17 and 33 percent of women have been physically assaulted by an intimate partner (Brown et al 1996). Nearly 130,000 rapes are reported annually in the age group 15 - 59 in the industrialised world (UNDP 1996).[10] Worldwide, half a million women die each year from causes related to childbirth, and in industrialising countries the average maternal mortality rate is 384 deaths per 100,000 live births (UNDP 1996). In industrialised countries the wage rate for women is two-thirds that for men (UNDP 1996). In the public sphere women are under-represented, for example throughout the world women hold only 12% of parliamentary seats (or equivalent), and constitute only 6% of national cabinets (or equivalent) (UNDP 1996).

[10] The rate of reportage being an underestimate of incidence due to the stigmatisation of sexual assault in nearly all modern societies.

Children are no more secure than females, and female children are more vulnerable than male children. In India and China, for example, infant females are far more likely to die than infant males (suggesting that it is extremely difficult to disengage population reduction programs from violence) (Brown et al 1996). More than 12 million children under the age of five die each year - mostly due to malnutrition - and over a third of all children in industrialising countries are malnourished (UNDP 1996). More than one million children, mostly females in Asia, are forced into prostitution each year (UNDP 1996).

Militarisation is arguably the single biggest institutional risk to human beings. The effects of militarisation come not merely from warfare, but also from the preparation for warfare and the opportunity costs to society forsaken by military expenditure (see chapter 8). Nuclear testing has been, and continues to be, a source of insecurity. Nuclear tests have been carried out at seven sites in the South Pacific, making four islands completely uninhabitable and causing above average cancer levels in residents of the Marshall Islands (Seager, 1995, Siwatibau and Williams 1982). Since the second world war the number of armed conflicts in the world has increased by 500%, most of these are intra-state, but no less fatal. In conflict zones throughout the world there are in excess of 100 million people who are chronically malnourished (UNDP 1996). By 1995 there were some 100 million landmines lying in the soils of 64 countries - an indiscriminate threat to the health and welfare of large numbers of people throughout the world (Brown et al 1996). Landmines deny people access to lands which can be used to grow food and for housing. In 1992 more than 20,000 women were raped in Bosnia in a deliberate systematic strategy of warfare (Brown et al 1996).

That militarisation continues to generate insecurity is made possible by the levels of expenditure on the military-industrial complex. Governments pay out large sums to buy 'security' of one kind at the expense of security of other kinds. An estimated US$8 trillion (US$8,000,000,000,000) has been spent on nuclear weapons alone since 1945 (Sivard 1996). In 1995 the world spent US$1.4 million dollars on weapons every minute (Sivard 1996). Lockheed Martin, the world's biggest defence company, earned US$19.4 billion in 1995, a sum greater than the GDP of 72 of countries (The Economist 1997, and after UNDP 1996). Worldwide, an average of 3.2% of every nation's Gross Domestic Product (GDP) was spent on defence expenditure in 1994 (UNDP 1996). There are vast discrepancies however, the U.S. military budget is bigger than the sum of the military budgets of the next

thirteen biggest spenders (Sivard 1996). U.S. military spending remains in excess of US$250 billion per annum (SIPRI 1996), to compare; the Russian Federation spends US$106 billion (1994), France US$42 billion (1994), Australia US$7.2 billion (1994), Bangladesh US$463 million (1993), Myanmar US$415 million (1993), and Guyana US$6 million (UNDP 1996).

The priority given to military spending can be revealed by expressing it as a percentage of government expenditure on health and education; for example in the United States (1991) military expenditure was equivalent to 46% of all expenditure directed towards meeting the health and education needs of U.S. citizens (UNDP 1996). Comparable figures are (1991): Myanmar 222%, the Russian Federation 132%, Bangladesh 41%, France 29%, Guyana 21%, and Australia 24% (UNDP 1996). For the industrialised countries military expenditure far exceeds official development assistance (ODA) to industrialising countries. The United States contributes one dollar to ODA for every 28 dollars on defence, a ratio of 1:28; Australia contributes at a ratio of 1:7, France contributes at a ratio of 1:5, Canada contributes at a ratio of 1:4.5, and Japan contributes at a ratio of 1:3 (after UNDP 1996).

Certain forms of insecurity are being lessened. The world's stockpile of nuclear weapons, long perceived as the single best threat to human survival, is gradually decreasing (Brown et al 1996). Globally, the levels of military expenditure have been on a downward trend since 1987 (Sivard 1996). There are positive signs on some health issues; smallpox has recently been completely eradicated, and polio has been eliminated in 145 countries (Brown et al 1996). Between 1960 and 1993 average life expectancy in industrialising countries increased from 46 to 62 years, the average infant mortality rate fell by more than half, the under 5 years old mortality rate fell by more than half, and now 80% of people in industrialising countries have access to basic health services and 70% have access to safe water (UNDP 1996). Females are increasingly attaining higher levels of education (UNDP 1996).

Consumption and redistribution are key concepts for understanding environmental insecurity. Consumption of energy, food and other resources is much higher in industrialised countries, and so a far larger amount of wastes are generated. Overconsumption in industrialised countries is therefore the primary cause of resource depletion and the overloading of planetary sinks. The average

Canadian, for example, eats 98 kg of largely grain fed beef, whereas the average Indian eats less than 20kg of beef - most of which is fed by grazing (Seager 1995). In 1991 there was one automobile for every 2.5 Australians as opposed to one car for every 200 Kenyans (Seager 1995). An average person in an industrialised country consumes ten times as much commercial energy as an average individual in an industrialising country (Seager 1995). The population of the industrialising countries is four times greater than that of industrialised countries, yet those in industrialising countries produce only a quarter of global atmospheric emissions (UNDP 1996). Meanwhile, the principal source of energy in industrialising countries, firewood, is becoming more scarce. It is estimated that by the year 2000 over 2.9 billion people will face firewood shortages, an increase of 1.2 billion people since 1980 (Seager 1995). A contributing factor in deforestation is paper consumption; in North America each person consumed an average of 302kg of paper in 1991, whereas in Africa the average person consumed only 6kg of paper in the same year (Seager 1995).

This overconsumption and lack of redistribution produces a double insecurity whereby long standing vulnerabilities arising from poverty are compounded by new vulnerabilities generated by environmental degradation. For example, a Bangladesh person has a life expectancy twenty one years less than a resident of Australia, a Bangladesh woman is ninety times more likely to die when giving birth than a women from Australia, and an average person from Australia consumes 90 times more commercial energy than a person from Bangladesh (UNDP 1996). There are therefore clear inequities and injustices between these two countries, environmental insecurities aside. However, an average Australian produces over one hundred times more greenhouse gases than the average person in Bangladesh (ie the Australian is more responsible for environmental insecurity), yet within 50 years up to 18% of Bangladesh could be flooded due to sea-level rises, whereas a much smaller amount of Australia's surface is likely to be flooded (WRI 1996). Furthermore, Australia has much greater wealth as a nation (Australia's Gross Domestic Product in 1993 was 12 times greater than that of Bangladesh), as do its residents (GDP/capita is 14 times greater), giving it the fiscal capacity to adapt to sea-level rise and increased climatic variability (UNDP 1996). The difference is that for an Australian, environmental insecurity is a problem of adaptation, for a Bangladesh person the problem is a matter of life and death. The are therefore discrepancies in responsibility for environmental

problems and vulnerability to environmental problems. The double vulnerability considered here underlies the idea of environmental justice.

The continued non-resolution of environmental insecurity motivates this thesis. Despite growing awareness of environmental changes, and long standing awareness of material insecurities, the problems persist. There can be little doubt that the world is aware of famine and malnutrition in Africa, clearfelling of rainforests in central America, the continued abuse of women and children, and the real possibility of sea-level rises. Why these problems have not been resolved is a vexing question. Answering this question requires (among other things), numerous in-depth studies on a variety of related subjects. This thesis is one such study. It also requires communication and exchange between these studies. Bearing this latter need in mind, this thesis seeks to be open, transparent and accessible such that this communicative requirement can be fulfilled more effectively.

1.3 Thesis Overview

The overarching aim of this thesis is ***to make a critical examination of the concept of environmental security***. There are three broad components to the satisfaction of this aim, these are addressed in the three Parts that comprise this thesis. First, there is a need to establish some foundations for the critical examination to proceed in an informed, consistent, and accessible manner. This is the function of Part I of this thesis, which establishes the critical, normative, and historical foundations upon which the subsequent examination is based. Part I is comprised of chapters 2 and 3 (individual chapters are discussed below). Second, there is of course a need to subject existing accounts of environmental security to critical examination. This is the function of Part II of this thesis. A cursory review of the environmental security literature reveals seven major themes: redefining security; environment, conflict and instability; environmental (national) security; military-environment linkages; ecological security; environmental (human) security; and the issue of securitisation (these are displayed in the heuristic guide located in the introduction to Part II). Part II begins with a preliminary chapter which discusses the meaning of security. Then it examines attempts to redefine security, as it was from these attempts that the concept of environmental security emerged. It then critically examines in turn the themes of conflict and instability,

environmental (national) security, military-environmental linkages, and ecological security. The theme of securitisation is discussed throughout Parts II and III. Part II is comprised of chapters 4 to 9. Third, there is a need to provide an account of environmental security which is informed by the critique, and which is linked to practice. This is the function of Part III of this thesis. Part III of this thesis advances the theme of environmental (human) security as, it is argued, this is theoretically and practically the most effective way to conceptualise environmental security. Part III also discusses some implications of this human-centred environmental security concept for politics, policy, and governance. Part III is comprised of chapters 10 and 11.

There are a number of specific requirements for a critical examination of the concept of environmental security, these are addressed in the first eleven chapters of this thesis (which are divided into the three Parts discussed above). The first of these is *to establish the problem to which environmental security speaks*. This was the function of the previous section of this chapter. It is important to establish the problem as this provides a firm basis upon which discussion can then proceed, and because, strangely, the problem to which environmental speaks is rarely explicated. To restate, the problem is environmental insecurity, understood as the vulnerability of people to the effects of environmental degradation. So, environmental security is a specific aspect of the broader problem of environmental degradation, defined here as the processes by which the life sustaining functions of the biosphere are disturbed.

In order to justifiably call itself 'critical' in orientation, it is important to outline the particular critical approach that this thesis adopts. Hence the second requirement to meet this thesis' overarching aim is *to outline the critical perspective for the subsequent examination of environmental security.* This is necessary to make clear the presuppositions and values that inform this thesis, it facilitates transparency and accessibility, it establishes some key concepts, and it gives a sense of the nature of the inquiry that follows. This is the function of chapter 2, which is the first chapter of Part I of this thesis. Chapter 2 discusses the Critical Theory of the Frankfurt School, feminist theory, poststructuralist theory and Green theory to elicit some features more or less common to all. These generally common features form the basis of this thesis' critical Green perspective, they include: an open declaration of the values informing the inquiry, a dialectical perspective, an appreciation and regard for history, a positive view of human

nature and an emancipatory intent, an holistic and interdisciplinary approach, and a concern for imagination and utopianism. Chapter 2 also discusses the normative concern of this thesis which is encapsulated in the notion of peace.

For a critical examination of environmental security to be both comprehensive and insightful it needs to have an understanding of the evolution of contemporary society, and an understanding of the history of the problem. Further, to be capable of generating effective recommendations for change, any conceptualisation of environmental security also requires this understanding. Hence the third requirement to meet this thesis' overarching aim is *to understand the evolution of environmental insecurity*. This is the function of chapter 3 which offers a meta-history of insecurity. Chapter 3 discusses four phases of human history: the hunter-gatherer phase, the early farming phase, the early urban phase, and the modern high energy phase. The principal findings are that over time population, energy use, social disaggregation, violence (structural and direct - see chapter 2), and environmental degradation have all massively increased.

Because 'security' is a key component of environmental security, there is a need to understand its meaning. Thus the fourth requirement to meet this thesis' overarching aim is *to examine the meaning of security*. This is the function of chapter 4, which is the first chapter of Part II of this thesis. This chapter discusses the concept of security in general terms, and then it discusses and critiques the political Realist approach to security which has conditioned almost all existing accounts of environmental security. Chapter 4 argues that the Realist approach to security protects the security of the state and the military-security establishment at the expense of the vast majority of people.

Part of any successful examination of a concept or idea is the need to understand its beginnings, hence the fifth requirement to meet this thesis' overarching aim is *to examine the origins of environmental security*. This is the function of chapter 5. Chapter 5 discusses efforts to extend and modify the dominant Realist approach to security as it was from these efforts that the concept of environmental security emerged. This chapter argues that despite good intentions these efforts did not sufficiently modify the Realist approach, and the new security concepts that were proposed were instead coopted by Realist security discourse.

Because the dominant Realist approach to security entails a concern for war, it is not surprising that environmental security is concerned about the ways in which environmental degradation may contribute to armed conflict. The most cursory review of the literature reveals this to be the case. This environment-conflict concern warrants critical examination, so the sixth requirement to meet this thesis' overarching aim is *to examine the idea that environmental degradation will induce violent conflict.* This is the function of chapter 6. Chapter 6 argues that contemporary concerns about environmentally induced conflicts reflect the (not essential) Realist ontology which assumes that people will resort to violence in times of stress. It argues that this literature fails to grasp the difference between resource and environmental problems, that it leads to militarisation of environmental problems, and that it obscures recognition of the day-to-day environmental insecurities people experience.

The concept of environmental security has been deployed in policy discourse. Examining the policy manifestations of environmental security reveals more clearly the way in which nation-states interpret and deploy the concept. Hence the seventh requirement necessary to meet this thesis' overarching aim is *to examine policy manifestations of environmental security.* This is the function of chapter 7. Chapter 7 begins by discussing environmental security as a national security phenomena, and then it examines the policy initiatives of the United States. This examination of U.S. environmental security policy finds that environmental security is interpreted and deployed in ways that legitimise the military and security establishment. It is then argued that a more robust environmental security concept is required to help resist military appropriation and to more effectively contest the meaning and practice of the concept such that humanitarian concerns can be heard in policy dialogue.

In addition to the issue of environmental degradation inducing conflict, the prevailing (Realist) war-oriented approach to security induces environmental security to consider the relationship between militaries and the environment. This warrants further examination, and so the eighth requirement to meet this thesis' overarching aim is *to examine the connections between the military and the environment.* This is the function of chapter 8. Chapter 8 discusses the environmental effects of warfare and the way military preparation for warfare degrades the environment. The principal focus of chapter 8 is on the difficult question of whether militaries may be able to help overcome environmental

insecurity. A tentative argument is made that militaries can make a positive contribution by engaging in non-core, non-coercive and domestically-oriented activities. The principal benefit of this, it is argued, comes from the possibility that it may assist in conversion of the military.

Chapters 4 to 8 focus largely on the security component of environmental security. Counterbalancing this, there is a need to explore the environmental, or ecological component, often expressed through the concept of ecological security. The concept of ecological security occurs simultaneously with environmental security, and is at times used interchangeably. The idea of ecological security presents a different approach to security and environment-security linkages, and so it warrants consideration. Thus the ninth requirement to meet this thesis' overarching aim is *to examine the concept of ecological security.* This is the function of chapter 9. Chapter 9 applies ecological theory to security, arguing that ecological notions of resilience and diversity can be metaphors for a more positive approach to security. It also discusses the difficult issue of sovereignty and ecology, and it suggests that rather than rethinking sovereignty, a broader project of rethinking the meaning and practice of politics is required. Chapter 9 also applies a framework for identifying ecological security problems. It is concluded that the concept of ecological security has many merits, but is not particularly effective in contesting the meaning and practice of security and its environmental dimensions. Ecological security does not engender a dialogue with the dominant Realist approach in the way that environmental security does. For this reason, this thesis argues that environmental security is the preferred term, but requires reformulation such that previously ignored ecological notions and humanitarian concerns are emphasised.

So, this thesis argues that a human-centred and ecologically infused environmental security concept can more effectively contest the meaning and practice of both security and environmental security. Such a reformulation of environmental security helps to overcome the limitations of existing approaches, and it may offer a genuine alternative approach to the comprehension and resolution of environmental problems. This is the essence of the tenth requirement necessary to meet this thesis' overarching aim, which is *to reformulate the concept of environmental security such that it overcomes the limitations of existing approaches.* This is the function of chapter 10, which is the first chapter of Part III of this thesis. Chapter 10 draws on the literature on human security to inform its

reformulation of environmental security. This human-centred environmental security concept is true to the normative value of peace, and is informed by the notions of risk and resilience. It is argued that a human-centred environmental security concept must seek to enhance the security of those people most vulnerable to the effects of environmental degradation; people are the first and overriding security referent. In chapter 10 the human-centred environmental security concept is explained, defined, related to the concept of sustainability, and then justified by answering some questions posed in the literature.

The applicability of this thesis' human-centred reformulation of environmental security is enhanced by a general sense of what it implies for politics, policy, and governance. So, the eleventh requirement necessary to meet this thesis' overarching aim is *to explore the implications of the reformulated environmental security concept for politics, policy, and governance*. This is the function of chapter 11. Chapter 11 does not propose detailed policy measures, arguing that these are available elsewhere. Instead, it addresses institutions of politics and governance, arguing that these are responsible for the failure to provide environmental security. The role of individuals as political agents is given considerable attention. Motives for individual action and the ways in which individuals may act to enhance environmental security are discussed. Next, some implications for national policy are explored. It is argued that national policy should foster dialogue between a more diverse range of interests represented in governance processes. It is also proposed that national governments should facilitate the implementation of a polycentric system of governance.

A concluding chapter seeks to cover the principal outcomes and contributions of this thesis, revisit its aim, and suggest some areas for further research (chapter 12). However, the general tenor of the critical perspective of this thesis makes it improper to suggest that there will be complete closure in this final chapter.

This structure of this thesis therefore contributes to the overarching aim to conduct a critical examination of environmental security. It works towards a critical (and comprehensive) examination of environmental security through careful consideration of the problem, the critical approach, and the history of the problem; by critiquing existing approaches; and on the basis of this proposing its own conceptualisation of environmental security and discussing the implications

of this for policy, politics, and governance. There are difficulties in moving through these various modes of thinking, particularly from critique to policy. The structure of this thesis seeks to resolve some of these difficulties, nevertheless, shifting from a position of critique to one in which a broad policy position is outlined is rarely done and is problematic. This thesis makes the transition through a broad understanding of policy as the means to transform society, this means that there is no detailed discussion of specific policies.

The structure of this thesis is also designed to make clear the assumptions and thought processes that comprise this study such that subsequent dialogue can be better directed. Finally, this thesis is an explication of a particular politics; it is hoped that this self-understanding is never obscured.

Part I

Foundations: A Critical Green Perspective and a History of Insecurity

Introduction to Part I

Foundations: A Critical Green Perspective and a History of Insecurity

Chapter 1 explained the problems that concerns this thesis, and it introduced some key concepts. Part I of this thesis introduces other concepts of relevance, and establishes the theoretical, normative, and historical foundations upon which this thesis' critical examination of environmental security is based. It is necessary to establish these foundations so that the critical examination can proceed in an informed, consistent, and accessible manner.

It is important to be clear about the kind of critical perspective and value orientation that informs this thesis (chapter 2). This makes the critique more effective, and it makes the analysis of this thesis open and accessible such that subsequent dialogue can be based on a clear understanding of the terms, concepts and intent of this thesis. This communicative function is vital because the lasting contribution of any study is the dialogue and intersubjective learning that it stimulates.

Part I also establishes the meta-historical origins of environmental degradation and environmental insecurity (chapter 3). An historical awareness is a key part of any critical study, and it is essential to effectively address contemporary problems such as environmental degradation and environmental insecurity. So, an awareness of history is necessary if environmental security is to be a useful concept.

Part I therefore sets the scene, and establishes the preliminary understandings necessary for a critical examination of environmental security. This thesis sees itself as a beginning, not an end, to the study of environmental security. Part I, then, is the beginning of this beginning.

Chapter 2. Outline of a Critical Green Perspective

2.1 Introduction

This thesis does not have a 'method' in any positivist sense, nor does it sit comfortably within any particular academic discipline. Instead, this thesis takes a 'critical' approach to the study of environmental security. The purpose of this chapter is to outline the particular critical approach that this thesis adopts. Bearing in mind Kant's famous observation that experiences without concepts are blind, and concepts without experiences are empty, this chapter seeks to establish the main parameters of this critical perspective rather than describe in depth the particular analytical concepts, or apply these in any detail (the proposed perspective is applied to 'experience' in the following chapters). Ultimately this thesis "seeks vindication in the plausibility of the stories it tells", so the function of this chapter is to establish the position from which it begins to tell these stories (Dryzek 1997: 9).

The chapter begins with a brief discussion of the terms of relevance, and then discusses what it understands 'critical theory' generally to be. Next, it summarises the core features of four key critical approaches - The Critical Theory of the Frankfurt School, feminist theory, poststructuralist theory and Green theory - with a view to eliciting some common features which can inform this thesis' own critical perspective. This is called a 'critical green perspective', suggesting that it seeks to be more critical than Green theory, and 'greener' than most critical theory. Green theory is generally (but not always) critical, but has arguably not engaged sufficiently with other critical theories (Dickens 1992). On the other hand, other critical approaches have not been able to fully connect with the Green perspective (Dickens 1992, Goldblatt 1996). This chapter is inspired by attempts to link the Green perspective with other critical approaches, such as those by Dickens (1992), Dobson (1992, 1993), Dryzek (1997), Eckersley (1992), Goldblatt (1996), Harvey (1996), Laferriere (1996) and Paterson (1996), all of which have "enlarged the ontological domain of radical social science" (Gleeson 1996: 232). This chapter does not claim to do more, nor indeed as much, as these previous efforts, but it hopes it might be able to shed some further light on this complex

field of study. This should be seen as a secondary function of this chapter. The primary function of this chapter is to describe the parameters of this thesis' critical green perspective, and in the process reveal its underlying normative concern.

Before proceeding, it is necessary to define certain terms. This chapter and the thesis as a whole talks of theories, concepts and discourses. A *theory* is understood to be "any abstract general account of an area of reality, usually including the use of formulation of general concepts" (Jary and Jary 1995: 686).[1] Theory is approached in this thesis as a critical, non-positivist way of knowing which is "reflective on the process of theorising itself" (Cox 1981: 128), and is "directed towards criticism: towards identifying, formulating, refining and questioning the general assumptions on which the everyday discussion .. proceeds" (Bull 1995: 183). There is a clear distinction between this critical approach to theory and that of the traditional (explanatory and predictive) positivist sciences.

A *discourse* is a specialist language which enables social power by describing the world in a particular way, and which makes possible certain claims to truth, hence justifying certain forms of action (Foucault 1977a). Discourses "operate to foreclose political possibilities and eliminate from consideration a multiplicity of possible worlds" (Dalby 1990a: 4). A discourse reduces contingency and diversity into a singular unifying framework (George 1994). A discourse therefore generates a particular account of reality which "can be mobilised for a particular political end" (Dalby 1990a: 8).

A *concept* is "the idea or meaning conveyed by a term" (Jary and Jary 1995: 111). A concept helps to explain, classify and organise thoughts. Although concepts have basic meanings and intuitive resonances, many concepts are contested. According to Jacobs, sustainable development, democracy, liberty and justice are examples of concepts which have competing interpretations (Jacobs 1991).

This thesis refers to environmental security as a concept rather than as a discourse or a theory because it is, at present, a contested idea. The contestation of environmental security involves discourses and theories, but the overall picture is one of contest of the term, making 'concept' the most appropriate label. The

[1] It is difficult to arrive at a satisfactory definition of 'theory'. This definition is deemed sufficient for the purposes of this thesis, however the question of 'reality' and how it can be known is not accepted unproblematically.

essential meaning of environmental security lies in the relationship between environmental degradation and security, but the details of this idea - the particular representation of the relationship - is the subject of debate. Thus it is most accurate to understand this thesis as an examination of the *concept* of environmental security.

A brief summary of the way philosophical categories influence theories, concepts and discourses is also necessary; this should not be read as a comprehensive account of philosophy. The study of 'first principles' is known as *metaphysics*, understood here as a concern for concepts such as being, time, space and substance; it is "the ultimate science of Being and Knowing" (Little et al 1973: 1315). *Cosmology* is "that part of metaphysics which deals with the idea of the world as a totality"; it is the particular way in which metaphysical problems are resolved (Little et al 1973: 433). The problem of understanding any given cosmology, even one's own, is arguably intractable. Contingent upon cosmology is *ontology*, understood here as what is presumed about the nature of things which exist (Harrison and Livingstone 1980). A particular ontology embodies how what is perceived to exist is understood, as opposed to cosmology and metaphysics which are concerned with the existence and understanding of things beyond immediate perception. Ontology is thought to determine *epistemology*, the way in which knowledge is produced. Finally, depending upon the approach to the production of knowledge, a *methodology* may be employed. Methodology is considered by this thesis to be "the techniques and strategies employed within a discipline to manipulate data ... the research methods used by an investigator" (Jary and Jary 1995: 410).

2.2 Critical Theory

'Critical theory' is a term that denotes, in the least, a concern for theorising in ways that seek to question established orders of knowledge, and to transcend those established orders which impede the realisation of 'the Good' - however understood. That even this minimal understanding is problematic (particularly with respect to the Good) is a reflection of the difficulty of talking coherently and conclusively about critical theory. For, even if referring to a particular understanding such as the Critical Theory of the Frankfurt School, a clear picture is by no means apparent. This thesis is concerned, however, with a broader

conception of critical theory, which could perhaps be more accurately referred to as "critical social theory" (George 1994: 139), or "critical theoretical investigations" (Campbell 1996: 129), or even more expressively as critical political and social theory. The general tenor of which, for the present, is reflected in the opening sentence of this paragraph, namely *questioning established orders with a view towards achieving the Good.*

When talking of critical theory a distinction can be made between critical theories that *explain* a phenomenon in a critical way and the critical *approach* to theory. These are not mutually exclusive and the distinction should not be taken too literally. This chapter describes this thesis' particular, but hopefully not overly inconsistent, critical approach (a 'critical green perspective') which draws on four loosely identified critical approaches which have particular relevance. These are: the Critical Theory of the Frankfurt School; feminist theory; poststructuralist theory; and Green theory.[2] Each of these critical approaches transcends the arbitrary drawing of disciplinary boundaries. That there are differences between these critical approaches does not infer sovereign domains based on boundaries marked on a one dimensional 'map' of knowledge. These four critical approaches should be seen as general 'types'. Each has a unique constellation of concerns, and particular ways of addressing these. There are common concerns and points of agreement, so these four critical approaches are by no means mutually exclusive. Further, as knowledge is never static it follows that each of these four approaches is in constant transformation, therefore a rigid demarcation is not merely counterproductive, but is inevitably prone to error over time. To be sure, in the milieu of approaches and issues discrepancies do arise, but these should be seen, as Morrow (1994) and Poster (1989) would suggest, in the context of the interaction and development of theory, not as evidence of entrenched difference. Focusing on the difference ignores the broader context and contribution which critical theory has made to study of society and nature.

This chapter is based on an assumption that there is an approximate element of complementarity between the four critical approaches identified. The following

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[2] In that critical theory approaches occur in all of the humanities and social sciences there is a very real problem in generalising about such perspectives. For the sake of clarity it should be acknowledged that the critical theory literature that informs this discussion comes mostly from the disciplines of human geography, international relations, peace research, and to a lesser degree political science and sociology (however these are defined!). Further, in as much as it is preferable to speak of the approach of a particular person or scholar rather than to generalise, the reader can infer that those scholars cited throughout this chapter are those that have informed this chapter.

discussion makes an extremely brief (and therefore necessarily crude) summary of these four critical approaches to elicit some generally common features which will therefore be of relevance to the critical green perspective of this thesis.[3] This discussion is not intended as a definitive account or comparison of critical theory types, nor will it prove or disprove the assumption of complementarity (a task which is arguably a PhD dissertation in its own right). Simply, this consideration of critical theory types seeks to keep this thesis' critical approach consistent with the broad parameters of the critical tradition.

2.2.1 The Critical Theory of the Frankfurt School

The Critical Theory of the Frankfurt School asks questions of the prevailing modern social and political order by juxtaposing the values espoused by a society to the realities of life within that society (the technique of immanent critique). Identifying and highlighting these contradictions serves an emancipatory function; it assists people to see through the ideologies that dictate the social order so that they may then act concertedly to counteract these to remake the social order (Benson 1983).

Critical Theory is normative in that it espouses the need for the 'Good life'. This sense of the Good grounds Critical Theory's analysis of the prevailing order (Wellmer 1985). It is important not to infer from this that Critical Theory holds a master plan for society. Instead, it seeks the emancipation of all people as the means to bring about the condition of freedom, therefore "the subsequent construction of the new society cannot be the object of theory, for it is to occur as the free creation of the liberated individuals" (Marcuse 1969: 135). With Critical Theory (as with this thesis), politics is the "realm concerned with realising the just life" (Devetak 1996a: 146).

Critical Theory appreciates material circumstances. It considers that the way in which society organises itself to provide for its material needs is imperfect - in as much as these needs could be supplied without repression. Materialism in this sense is a concern with human happiness and the conviction that necessary to its fulfilment is a transformation of the relations of production (Leiss 1970). This concern for materialism contributes to what Morrow considers to be a

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[3] The discussion presented here is based on the more extensive summaries located in Appendix I. This has been necessary in order to keep the length of this thesis within ANU guidelines.

distinguishing characteristic of the Frankfurt theorists, that is a certain "supradisciplinarity" and an openness to theories and methods from the social sciences, humanities and non-Marxist philosophies (Morrow 1994: 12). Further, Critical Theory adopts an holistic view of society by seeking to understand it in its totality, rather than as the sum of narrowly defined and separately studied parts. The breadth of the critique is indicated by White: "As originally conceived, critical theory would have the role of giving new life to ideals of reason and freedom by revealing their false embodiment in scientism, capitalism, the 'culture industry' and bourgeois Western political institutions" (White 1995: 4).

An important aspect of Critical Theory is its concern for self-reflection, understood as a concern "with its own mode of insertion into the social world" (Benson 1983: 335). Critical Theory is aware of the connection between knowledge and power. It is in this political understanding of knowledge and power that the openly (in Marcuse's terms 'obstinate') normative character of Critical Theory must be understood. Critical Theory understands itself as political, and explains its politics as a concern for emancipation - the process of making people free.[4]

Common to all who follow the Frankfurt School tradition is a view of society as an historical production. Critical Theory observes that "not only is history a one-way street, but also that we are irremediably, presently and wholly constituted by that history" (Dobson 1993: 195). Although appreciating that society is a product of history, Critical Theory (after Marx and Hegel) assumes that human activity produces and reproduces the world: "through our daily attention and neglect we reproduce our world, for better or worse" (Forester 1983: 246). Critical Theory therefore views human society as an ongoing social production, and so rejects the existence of natural laws (Linklater 1990). Thus society is historically shaped and socially reproduced, producing what Heydebrand calls the "dialectical process of transforming and self-transforming activity", where 'self transforming' refers to the capacity of human agents to consciously generate a social order that transforms the present (1983: 308). This understanding of the dialectical nature of social reproduction is linked to a dialectical understanding of the relationship between theory and social structure. For the Critical Theorists, theory itself reflects and recreates social reality (Leiss 1970).

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[4] Freedom is the ability of people to continually be able to create and recreate themselves and society. The extent to which this is possible is the extent of freedom (after Marcuse 1969).

This self reflexive understanding holds that in describing the possibilities for transformation of society, Critical Theory indeed affects some change in society (Leiss 1970).

Summary

The Critical Theory of the Frankfurt School is interdisciplinary and seeks to understand problems within an holistic and historical view of society. It is materialist at least in the minimal sense of appreciating that constraints are placed on individuals by relations of production. It is dialectical in that it recognises that social structures are socially produced and can be reproduced. Critical Theory is self reflective and understands itself to be manifestly political, and so is explicit about its conception of 'the Good' and 'freedom' to which it aspires. Critical Theory questions the philosophical foundations and repressive tendencies of the modern order and seeks to transcend these.

2.2.2 Feminist theory

Feminism can be understood as a social movement (feminism) and as a form of critique (feminist theory). This discussion refers primarily to feminist theory. Discussing feminist theory is difficult as "there is no one feminism, no single approach to the construction of feminist theory, but multiple variations of feminism which often embrace very contradictory and overlapping positions, discourses and practices" (True 1996: 212); thus "feminism defies premature attempts at closure" (Elshtain 1995: 342). However, what is common to all feminist theory is a (normative) concern for the oppression of women: "whatever else it is, feminism is at least the movement to end sexist oppression. It involves the elimination of any and all factors that contribute to the continued and systematic domination or subordination of women ... all feminists agree that sexist oppression exists, is wrong, and must be abolished" (Warren 1993a: 321). A feminist dictum is that the oppression of women is a significant - if not *the* original - axis of oppression (Carrol 1996).

Feminist theory understands those social relations by which women are oppressed to be patriarchal. Institutions such as household production, paid labour, and popular culture can be patriarchal, as can organisations such as government, the market and the military (Walby 1990). Conceptual frameworks are patriarchal when they justify and maintain the subordination of women (Warren 1993a).

Feminist theory talks of gender as a fundamental axis of discrimination: "feminist theorizing is distinctive insofar as it reveals how much of social practice depends on manipulation of gender" (Enloe 1987: 543). Gender is not the same as 'sex' (biological difference) but is "a set of culturally shaped and defined characteristics associated with masculinity and femininity" (Tickner 1992: 7). To talk of gender, then, is to question the construction and relationship between 'masculine' and 'feminine' based on the (false) conceptualisation of differences in sex as being as basic dichotomy of life. The relationship between the two is binary because masculinity has no meaning without a feminine 'other'.

Based on its understanding of sex and gender, one of the broader logical foundations that feminist critique tackles is that of dualism: "among the many issues that feminism is said to address, I would place 'dualism' as central" (Glennon 1983: 260). For feminists the problem with dualisms is that they are deployed in oppressive conceptual frameworks to establish inferiority and to justify subordination and domination (Warren 1993a). An understanding of gendered dualisms as a basic feature of social life enables feminist theory to link numerous forms of oppression in insightful ways. Ecofeminists, for example, understand the domination of nature, rationalised through dualisms such as man/nature, to be linked with the domination of women (man/woman) (Merchant 1982, Seager 1993, Shiva 1989).

A fundamental aspect of the contemporary use of dualisms is the way in which the latter of the pair (typically associated with femininity) is devalued or excluded (Marchand 1996, Tickner 1992). In understanding that "what gets left out is often as important as what is put in and assumed" (Elshtain 1987: 48), feminist theory critiques what is assumed to be normal and so "reopen(s) the possibilities for development which have been successfully locked off by conditioning" (Greer 1993: 17). Feminist theory understands that exclusion is integral to identity creating processes such as nationalism, colonialism and racism, and that gender exclusion is pivotal in making all exclusion possible (for example see Pettman 1995, 1996). As a means to transgress dualisms, feminist theory is concerned with what Glennon (1983) calls 'synthesism', or holism. This approach can be said to be dialectical in that it makes possible the idea of 'both' (Glennon 1983).

Some feminist theory is concerned with the claim to objectivity enabled by the object/subject dualism. The claim of objectivity (masculine, scientific and rational) by its binary nature devalues subjectivity (feminine, unscientific and irrational). In as much as it rejects the objective and embraces the subjective, feminist critique tends to reconfirm the Critical Theory belief that scientific objectivity is a falsity. Feminist research therefore recognises "that all knowledge is partial and is a function of the knower's lived experience in the world", and so it takes the subject positionality of the author seriously by making clear its assumptions, presuppositions and normative underpinnings (Tickner 1992: 17, Dooley 1987).

This awareness of subjectivity makes feminist critical theory self-reflective. Feminist critique is aware of the changes in society that can be affected by theory, thus "it is especially important to look at the implications of theorising as an activity, and not simply at the resulting theories" (Enloe 1987: 526). Like Critical Theory, feminist theory seeks to use this understanding of the political nature of theorising to affect a change consistent with its values. Consistent with this dialectical understanding of theory, feminist theory assumes that institutions of oppression are not fixed but are ongoing processes made possible by human thought and action, and so a change in human thoughts and actions can effect a change in social relations. Thus feminist theory considers that 'the personal is political', which is to say that structures of oppression are enabled by all forms of oppression, so resistance to patriarchy in the private realm is equally resistance to patriarchy in the public realm.

Summary

Feminist theory critiques forms of logic and foundational beliefs that make possible the oppression of women. It appreciates that concepts such as gender, and the behaviours that these enable, are socially constructed and enable oppression. Feminist theory is self-aware and is committed to theoretical self-reflection. It is holistic in that it seeks to overcome fractured and dualistic conceptions of the world, and it is an interdisciplinary and flexible perspective that speak to all forms of oppression in all places, at all scales.

2.2.3 Poststructuralist theory

In speaking of poststructuralist theory this thesis is speaking of a particular kind of post-positivist thinking which differs from other types of critical theory, including feminist theory, and which differs in some respects from post-modernism. Exactly what constitutes this difference is the subject of a much larger debate, but what all poststructuralist theories have in common is that they ask how knowledge, truth and meaning are determined (Gregory 1989). Because poststructuralist theory resists simplistic classifications, and because it resists definition, this discussion is cognisant that it cannot speak of 'a poststructuralist theory' as such. Nevertheless, in as much as this thesis identifies a poststructuralist perspective, some discussion of its core features is necessary. Ashley indicates the general concerns of poststructuralism:

> The poststructuralist wants to know .. how modes of order are produced, imposed, problematized, and resisted as well as why, despite resistance, modes of subjectivity, objectivity and conduct are reasserted on a still wider scale....She wants to understand the workings of power in the most general terms, and she wants to understand power's relation to knowledge. She wants to examine overt and covert relations between institutions and thought.
>
> The boundary itself is never simply there, poststructuralism knows. It is always in the process of being marked, transgressed, erased, and marked again (Ashley 1989: 279 and 311).

Poststructuralist thought arose in response to the failings of structuralism (Jary and Jary 1995, Morrow 1994). 'Structuralism' is generally considered to have made a key contribution by suggesting that reality is located in linguistic performances, and that societies can be understood as being in some way analogous with their language and linguistic characteristics (Jary and Jary 1995). Poststructuralist theory denies the bold assertions of explanatory power that the structuralists made, and rejects the idea that the study of language is wholly capable of explaining society. Poststructuralist theory nevertheless remains deeply concerned with language, speech and text. Most significantly, poststructuralists are concerned with meta-theories (Marxism or Enlightenment for example) which seem to explain the totality of social life at the expense of diversity. Therefore poststructuralists are dubious of the possibility that social reality can ever be objectively 'known', for "there is no 'truth', only competing perspectives and 'regimes of truth'" (Devetak 1996b: 185).

Poststructuralists consider that language is not a neutral carrier of knowledge.[5] For Derrida, language is comprised of definitions (signs) that are made possible by determining what the sign is not, hence meaning is determined by differentiation (Derrida 1978). Because meaning resides in difference, a stable understanding of meaning is never fully achieved, so language (and the world it describes) is always in a state of flux and redefinition. Following on from Derrida, poststructuralist theory seeks to 'deconstruct' the 'text' to reveal the uncertainties that arise when meaning resides in the relation to other (differentiating) texts (intertextuality).[6] So deconstruction seeks to destabilise claims to truth by breaking open the linguistic performances which mediate understanding of truth. Attention is drawn to the use of metaphors that describe figuratively, and to the use of dualisms or binaries that assert meaning by simplistic differentiation of an 'other'. Deconstruction frequently involves reasserting the subordinated 'other', which often takes the form of listening to those who are marginalised. Another way of appreciating the linguistic basis of claims to truth arises from consideration of 'discourse' (defined earlier in this chapter).

A key insight of poststructuralist critique is that knowledge is rooted in power relations.[7] Poststructuralist theory views knowledge and power as being mutually constitutive (Foucault 1977a).[8] For the poststructuralist, power is located not so much in structures and organisations, but in the ability to deploy the knowledge that shapes understanding and action. Therefore poststructuralist critique focuses on the linguistic acts which, as they communicate 'a' knowledge, exclude alternative ways of knowing. Because knowledge and power are seen to be inseparable, those ways of knowing that claim universality or to speak a 'truth' are infused with the power to make the world in their image, and in so doing oppress alternative possibilities that may be less violent.

The normative dimension of poststructuralist critique is elusive. If literally interpreted in a relativist postmodern fashion, it can be argued that a concern for the Good life is impossible for the poststructuralist because to articulate a

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[5] The importance of language can be traced to Wittgenstein's linguistic philosophy.

[6] A 'text' is a written or symbolic representation of the world which can have its own existence beyond the writer (after Jary and Jary 1995).

[7] Also an insight of feminist theory.

[8] This comes in part from understanding knowledge in genealogical terms in which a contemporary way of knowing is understood as being contingent upon the filtering of alternative conceptions throughout history. A genealogy of an idea is a strategy to reveal the alternative conceptions which have been excluded in the process of determining a unitary understanding of an idea which serves vested interests (Foucault 1980a).

universal requirement is to 'will to power' a world in the image of the theorist that is inevitably exclusive and repressive to some degree.[9] Nevertheless, however amorphous it may be, most poststructuralists have a normative goal that not merely enables them to prioritise the problem of power as opposed to any other problem, but which also enables them to talk of power *as a problem.* Although it is rarely made explicit, poststructuralist theory is concerned about the way in which power and knowledge are used to affect privileges which degrade the lives of others. Gregory alludes to this when referring to all the writers in *International/Intertextual Relations* as sharing "an interest in learning how discourse is related to the construction and subjugation of humankind" (Gregory 1989: xxi).

The poststructuralist approach is interdisciplinary in that it transgresses "arbitrary limits" and "open(s) up hitherto closed off connections" between ways of knowing and thinking (Ashley and Walker 1990a: 264). The insightfulness of poststructuralist critique makes it inevitably confluent with social movements that seek to critique institutions of power, including feminism, environmentalism, the peace movement, worker's movements and cultural movements (Ashley and Walker 1990b). Poststructuralist theory's interdisciplinarity lies to a large degree in its attempt to break down the arbitrary boundaries of knowledge that isolate confluent concerns such as these.

Poststructuralist theory's denial of objectivity or 'a truth' demands an awareness that the author is constructing her own discourse and her own subjective theory. For Ashley, for example, the poststructuralist "must be persistently, openly, blatantly politicizing in the theory she does... she must understand that theoretical practice is inescapably as much a political practice as any other practice she might care to name" (1989: 280). Like feminist theory and Critical Theory then, poststructuralist critique appreciates that to do theory is to do politics.

Summary

The poststructuralist approach, as understood by this discussion, is fundamentally concerned with representations of the world. Language, text, discourse and popular culture are all seen to be responsible for creating an allegedly objective understanding of the way the world is, and in so doing influence behaviour such that the social world is constituted in the image of prevailing representations.

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[9] See the discussion on postmodernism in Appendix I.

Poststructuralist theory critiques these representations by revealing the way in which they rely on exclusions. Poststructuralist critique has latent normative concerns, and it transcends disciplinary divides.

2.2.4 Green theory

The word 'green' refers to both a social movement (environmentalism) and a method of critique (Green theory), the latter being of prime concern for this discussion.[10] The factor common to all Green perspectives is a concern for the degradation of parts or all of the biosphere, hence "although deep ecologists, animal rights activists, ecofeminists, social ecologists, Heideggarians, pantheists, sociobiologists, and others find much to disagree about, they are united by a rejection of the narrowly anthropogenic and utilitarian world views of industrial society and liberal morality" (Dryzek 1990a: 195). 'Environmentalism' and 'green' are understood here in the original and radical way like that posed by O'Riordan, as the search for "the resolution of the arrogance of a [wo]man orientated view of the world with the humility of accepting [wo]man's dependence on the offerings of nature" (1976: vii); and as seeking "to drive at the very heart of western society's hubris and optimism, and to develop a new moral order based on principles of nature's justice, thermodynamic laws and biogeochemical cycles" (O'Riordan 1989a: 411). This understanding is reasonably synonymous with 'radical ecophilosophy' (Zimmerman 1993), 'Green Politics' (Patterson 1996), 'Green Political Thought' (Dobson 1992), or 'Green Radicalism' (Dryzek 1997).

Green theory has a normative concern for *excessive* degradation and for a *harmony* or *balance* between human activity and the biosphere, most frequently expressed as the need to live *sustainably*. Not unlike 'freedom', the limits of sustainability are ambiguous and very hard to quantify, hence notions such as harmony and sustainability are seen as conceptual devices and as goals to strive for. For the environmentalist this lack of precision does not impede commitment.

Green theory exposes the fallacious assumptions of modern culture. It argues that growth cannot be finite, that progress need not be material, and that humans are but one of millions of species equally dependent on the biosphere. It understands the degradation of the biosphere to be rooted in modernity, that is as

[10] On environmentalism see O'Riordan 1976, 1989a, 1989b, and 1995. O'Riordan (1989b) distinguishes between environmentalism and Green theory, arguing that environmentalism is the broader set of values and views of the world (the components of which are frequently in tension), whereas being Green is a subset of environmentalism.

being inextricably connected to the "political, social, economic and scientific consensus that dominates the late twentieth century" (Dobson 1992: 4). Green theory has much in common with Critical Theory on this point, both are wary of the scientism and instrumental reason that emerged with the Enlightenment. An appreciation of history is therefore integral to Green theory (hence chapter 3 of this thesis).

Green theory has a particular understanding of society which most resembles that of feminist theory. Society is understood more in terms of agglomerated individual behaviour than as a product of abstract systems. Hence, like feminist theory, Green theory seeks reform through individual resistance. It seeks "a shift in the strategies and assumptions of our lives" such that the institutions of modernity are reformed from the bottom up (Dobson 1993: 190). From this perspective, all individuals who 'overconsume' are seen to have a responsibility to lessen ecological degradation and the differential impacts this has on less affluent people (George 1977, Trainer 1985, Goldsmith 1988). This thinking underlies the popular slogan 'think global, act local'.

The Green slogans 'think global, act local', and 'everything is connected to everything else' embody a sophisticated perspective on (for want of a better term) systemic interaction. These open up the issue of scale in unconfinable ways. Greens would consider, for example, that just as the individual is a synergistic component of the social, the subatomic particle is an inextricable component of the biosphere. This speaks to an unlimited conception of space as well. Greens would consider, for example, that the stand of trees in any local park has some ecological function in global terms, just as the British household has some function in the global economy. So, Green theory understands the subatomic particle, the individual, the stand of trees and the global economy to be interconnected and interrelated. Thus Green theory embraces interdependence and complexity. This picture of complexity requires Green theory to be (arguably) more interdisciplinary and more holistic than any other type of critical theory. Green theory is very much attuned, then, to the problems of uncertainty and how to act in the face of incomplete or partial 'truths', it also suspicious of 'facts' in the light of this pervasive uncertainty (Paterson 1996). In as much as this renders 'the boundary' - be it physical or conceptual - meaningless, Green theory is an exemplar of poststructural sensibility (Doran 1995).

Like other critical approaches, Green theory has an awareness of the role of theory in revealing the impediments to realisation and subsequent action. Green theory seeks to empower change because "solutions can only come from the struggle and the personal conviction that a better collective existence is possible for all the world's population, living and yet to be born" (O'Riordan 1976: vi). What is arguably absent though, is the degree of self reflectiveness characteristic of feminist theory.[11] This lack of self reflectivity underlies the contestation of the 'green' agenda that concerns Dobson (1992) and Paterson (1996), and which is in turn played out in an important way in the literature on environmental security. The time when most environmental writings had an unambiguous agenda has long passed, and because the positions and presuppositions of the writer have not traditionally been made explicit, counter-environmental and counter-critical perspectives have been able to emerge under the guise of a common concern for 'the environment'. So the argument presented here is that theoretical and author self-reflectiveness is not only 'honest politics' (in as much as all theorisations are political), but also wards against agenda capture.

Summary

Green theory is a critical, emancipatory perspective which begins from a belief that at present the totality of human behaviour is environmentally unsustainable (O'Riordan 1989a). It understands that the social practices and institutions that create this unsustainability are enabled by historically produced structures of reason and forms of knowledge, particularly those that emerged with the Enlightenment. Green theory appreciates complexity, interdependence and the uncertainty that these create. This necessitates an holistic outlook and an interdisciplinary perspective.

2.3 Towards a Critical Green Perspective

Thus far this chapter has discussed four critical approaches with a view to elicit some points of commonality that can inform this thesis' own critical approach. The 'critical green perspective' that is being developed here is informed by the

[11] O'Riordan suggests that "critical self-awareness is very much a part of the politics of modern Green theory" (1989a: 400), however, I consider this to be considerably less the case when compared to the extent to which feminism and some forms of poststructuralism are self-aware.

features more or less common to these four critical approaches, namely: the need to be clear about the role of theory, the role of the theoretician, and the assumptions and values that underlie the theory; a dialectical perspective; an appreciation and regard for history; a positive view of human nature and a concern for emancipation; an holistic and interdisciplinary approach; and an imaginative and utopian element. This section explains these general characteristics which form the basis of this thesis' 'critical green perspective'.

2.3.1 The role of theory

According to Dalby, "critical scholarship has a role in charting the dimensions of our current dilemmas and crisis, exploring how we came to our present state of affairs and suggesting how we might act and think differently" (Dalby 1990a: ix). This thesis shares with the four types of critical approaches discussed the understanding that no knowledge is value free, and that a critical perspective that seeks to affect a change consistent with its underlying values is a political act as it does not merely describe the world but may also create the world in its image. Hence, because much is at stake, the onus is on the theoretician to be absolutely clear about what is being said, what is not being said, and what values are informing the theory. This is the essence of the rationale for this chapter.

2.3.2 Dialectics

A feature generally common to the four critical approaches discussed is a dialectical view of society. Dialectical thinking emphasises processes, relations, fluxes and flows, and so understands the individual in relation to the process and flows that influence her, and which she reflexively influences in turn (agency makes structure and structure makes agency) (Giddens 1984, Harvey 1996). Understood another way, a dialectical perspective seeks to move beyond the subject/object dualism. All of the four critical perspectives discussed in this chapter consider that society is *not fixed* in time or in nature. The dialectical position approximately shared by all is that contemporary society is for the most part an historical production and so is for the most part highly mutable. This is the source of optimism and hope of all dialectical theories; society can change for the better.[12]

[12] Or pessimism - for the worse!

The critical green perspective of this thesis seeks to be approximately continuous with this dialectical mode of understanding. This thesis understands dialectics (a difficult term) as the view "that elements, things, structures and systems do not exist outside of or prior to the processes, flows and relations that create, sustain or undermine them" (Harvey 1996: 49). In the dialectical view, boundaries waver, the world is in flux, things move, history matters, and 'all that is solid melts into air'.[13] Thus ecosystems, societies and their institutions are not permanent nor discrete, but change and flow across time and space.

A danger in adopting the dialectical perspective is that it can deny the relevance of 'things'. So although the dialectical approach is given an "ontological priority" in this thesis (Harvey 1996: 8), in as much as it addresses environmental problems, the critical green perspective incorporates a substantial materialist element as well. The suggestion here is that there is an unavoidable extent to which the environment is a 'thing'. This is not to say that the societal roots of environmental problems cannot be explained dialectically, nor is it to say that nature is not itself constantly in flux; indeed an ecological and evolutionary view supports the dialectical perspective. What the muted dialectical/materialist perspective argued for here does say is that there are some permanencies that matter; for example, as far as we know, people must eat and drink clean water to be healthy, bombs and bullets hurt, rape injures. It is a concern for these 'solids' that motivates the normative dimension of this thesis' critical green perspective (see section 2.4).

2.3.3 Historicity

A concern for history is common to the four types of critical theory considered, indeed such a concern is consistent with the dialectical perspective (Giddens 1985a). More specifically, each of the four critical theories, and therefore the critical green perspective developed here, appreciates that what exists is the product of particular and distinctive historical circumstances. According to this historicity perspective, that which exists - be it a society, a 'thing', an idea or a theory - cannot be understood independently of history. Green theory, for example, is cognisant of the need to understand the history of environmental degradation; feminist theory likewise seeks to understand the oppression of women in terms of the past; Foucault sought to appreciate the particular understanding through

[13] Marx's famous dictum

genealogical deconstruction; and the Frankfurt School looked for the origins of instrumental reasoning. Therefore history matters, which is why the following chapter seeks to explore the evolution of contemporary environmental insecurities.

2.3.4 Human nature and emancipation

The critical perspective developed here understands society to be a product of history and processes (not as "a reified object world"), and human behaviour to be both a product and producer of society (Benson 1983: 345). Human nature itself is also understood in a dialectical way. The view here is that people are not essentially 'good' or 'bad', but there are degrees of recognition of influence, be they cultural norms (like consumption), discourses, ideologies or more overt coercive factors (after Heydebrand 1983). The role of critical theory is to unmask and critique these influences and 'powers', beginning with those that clearly foster violent and repressive behaviour (and so can be understood as violences in their own right). Because people are seen as being both susceptible to influence and as having influence (agents), critical theory encourages realisation, recognition and contemplation of the situation of the individual in the social milieu.[14] Indeed, according to Dryzek:

> A critical social science theory is verified not by experimental test or by interpretive plausibility, but rather by action on the part of the audience who decide that, upon reflection, the theory gave a good account of the causes of their sufferings and effectively pointed to their relief (Dryzek 1995: 99).

This is another way of understanding the emancipatory role of critical theory.[15] 'Power' is a key theme here. As alluded to in chapter 1 (section 2), and as will be discussed more fully in chapter 11, people in the industrialised world have more freedom and more power to resist or recreate the broader processes and institutions which are socially and environmentally damaging.

2.3.5 Holistic and interdisciplinary

The four critical approaches which inform this thesis' critical green perspective are understood to be interdisciplinary and holistic. The Critical Theory of the Frankfurt School is concerned with any economic, political, cultural or philosophical process by which the human condition and 'nature' are oppressed,

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[14] Which is very much what this thesis does for the author.

[15] At this point it needs to be acknowledged that emancipation cannot be understood independently of ethics. Ethics answers the question 'how are we to live'. Such answers are necessary for the individual to reconcile competing demands and guide behaviour such that freedom for all - and hence real freedom for the individual - is advanced

and so looks at society as a whole. Feminist theory is similarly holistic and multi-dimensional in the way it addresses all and any causes which degrade the lives of women. Poststructuralist theory's focus on power and logic/linguistic processes is likewise able to speak of any number of social problems.[16] Green theory has perhaps the strongest claim to holism and interdisciplinarity through the appreciation that 'everything is linked to everything else'. Green theoreticians are constantly forced to link disciplines and theories in their attempt to understand the philosophical, social and biophysical processes involved in generating environmental degradation.

The dialectical view of each of these four critical approaches is holistic by virtue of the emphasis on wholes rather than parts, and the appreciation of processes, connections, and that a 'thing' has little meaning except in relation to that which produced it and surrounds it. The claim for holism can also be made for each of these critical theory types through the way in which each appreciates history to be a constitutive foundation of society. Finally, integral to each is the focus on broad problems (for example unfreedom, oppression of women, power, and environmental degradation) which ground the critique and enable identification of an array of different causes of the problem: "important problems are almost always interdisciplinary" (Lebow 1988: 509). This grounding in the problem is arguably the key to interdisciplinarity. This thesis adopts an holistic and interdisciplinary approach in all these respects.

There is a broader point to be made here. The claims of particular academic disciplines to be in some way 'distinct' are becoming less tenable: "society is being historicised, culture is being politicised, history is being anthropolgised, nature is being denaturalised" (Anderson 1996: 121). To identify with 'a' discipline is to restrict explanatory capacity: "the narrowness of functionally specialized agencies and scholarly disciplines further blocks out large areas of awareness and understanding, a process reinforced by the vested interests and ideologies growing up around them" (Bennett and Dahlberg 1990: 78). Thus Toynbee writes that "this academic quarrel is foolish, perverse, and inimical to true knowledge and understanding" (Toynbee 1966: 89). However, a risk of interdisciplinary scholarship is the possibility of crudely treating the deeper

[16] Witness Foucault's writings on sexuality (1980b) and punishment (1977b), the study of 'critical geopolitics' (O'Tuathail and Dalby 1998), and critiques of mainstream International Relations discourses (Der Derian and Shapiro 1989).

insights arising from a singular perspective. There are other risks, which Rose explains:

> I know when I draw on ideas from a discipline not my own I worry if I've got that discipline right, if there aren't certain assumptions it makes that I'm breaking which invalidates my account, if there isn't something really important I just don't know about. In one sense that worry is quite groundless, of course; interdisciplinarity work is all about risk, about juxtaposing the unexpected, about two different discourses brushing unevenly against each other's grain. On the other hand, that worry is also a part of the pleasurable dangers of transgression which come from saying something quite new and disruptive (Rose 1994: 117).

This thesis takes these risks, it does not identify with 'a' discipline, nor is it particularly concerned to identify disciplinary contributions.

2.3.6 Imaginative and utopian

The function of critical theory is to unmask the political, cultural, economic, ideological, and linguistic impediments to the realisation of the 'Good' (in this thesis understood as 'peace' - see the following section). In stipulating the need for the 'Good' critical theory, and more particularly Green theory and the Critical Theory of the Frankfurt School, is utopian. However the extent to which critical theory seeks to specify the 'Good' in detail varies. Arguably it seeks to negate impediments more than it articulates a positive vision. An imaginative/utopian element is required though, because it enables talk of futures and possibilities in a meaningful and hopeful way. The critical green perspective being developed here incorporates this imaginative/utopian approach because "the human imaginary has to be deployed to its full force in the quest for progressive socio-ecological and political-economic change" (Harvey 1996: 12).

The role of 'imagination' in theory is often understated. To make anything we first need to conceive of it. To imagine a better society is to engage in a way of thinking that challenges the limitations of prevailing ideologies and reason, it "involves us in new concepts and principles, in new ways of using our minds to grasp complexities we do not yet comprehend" (Gowin 1988: ix).[17] Imagination is part of theorising for a different world: "what we feel, believe, think, expect or wish shapes not only our present behaviour but also the kinds of futures we will transmit and posterity will inherit" (Falk et al 1982b: 499). Imagination is needed

[17] This raises a host of deeply difficult questions about the ability to think and imagine in ways that are totally independent of the conditioning effects of prevailing modes of thought and reason. Whilst no-one may be capable of imagining a (plausible or 'sane') world completely distinct from anything we know today, the collective process of trying to do so can pull 'reality' and possibility in new directions.

to suggest the possibility of change and to resist the identification of the present social order as being somehow 'natural' and eternal (Morrow 1994). Boulding talks of a 'social imagination' (1988) and the Frankfurt School of a 'dialectical imagination' (Jay 1973); both seek to transcend the limitations of the present to shift consciousness towards the possibility of a better society. Marcuse is succinct on the value of imagination:

> Imagination denotes a considerable degree of independence from the given, of freedom amid a world of unfreedom. In surpassing what is present it can anticipate the future (Marcuse 1969: 154).

The imagined society is known as 'utopia'. Utopias stand as ethical or theoretical possibilities which contrast with contemporary society, and which suggest avenues for action to transcend the present; thus they help "influence the immanent possibilities of action" (Giddens 1985a: 338).[18] 'Utopia' is frequently used pejoratively by 'realists', but according to Marcuse this denouncement indicates that there may indeed be a valid potentiality in the derided 'utopia' (Marcuse 1969: 143). Sayer and Storper speak of the validity of utopianism: "we should not dismiss a kind of utopianism that attempts to think about the feasibility of desirable alternatives in terms of how the recommended social processes would work, asking counterfactual questions, conducting thought experiments, and scrutinising critical standpoints" (1997: 7).

This thesis seeks to incorporate an imaginative dimension into its critical green perspective. Imagination enables the critical green perspective to go beyond pure critique to talk of transformation in a way that helps to answer the questions: 'so what?', 'what next?' or 'how?'. This is problematic as critical theory, properly understood, does not have to answer the question because the answer - 'eliminate oppression' such that individuals are free to create the society *they* want - resides in the critique. However, in as much as we live in a society dominated by

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[18] To put forward a utopia is to flirt with the potential to create an hegemonic understanding of 'the Good life' which is arguably good only for the proponent. Like theory more generally, every image of the future contains bias, and every image of the future has the potential to be reified. Part of the way to avoid misappropriation and hegemony is to state clearly and openly the principles and values that inform the imagined society such that these can be assessed and debated - hence the reason for the following section. Nevertheless, the danger is apparent, certain visions have powerfully captured the popular imagination and made the world in their image, for example Falk et al (1982b) talk of slavery as the realisation of an 'image', and Harvey observes that the imagery of emancipation and progress underwrote the emergence of institutionalised capitalism in the eighteenth century (1996: 131).

instrumental rationality, a critically informed but nevertheless imaginative answer to the question 'what next' is necessary. It is through this imaginative function that the difficult intellectual shift from critical theory to public policy can perhaps take place such that policy can itself become an 'instrument' of emancipation. So an imaginative theory *creates* by proposing alternatives to the present that are consistent with the insights and values that underlie the critique. The following section seeks to explicate the values and normative position that underlies this thesis' critical green perspective, these are encapsulated in the notion of peace.

2.4 Peace: A Normative Position

A normative theory is understood as a mode of theorising which incorporates the inescapable beliefs and values of the theorist into the theory in explicit and instructive ways (Morrow 1994, Jary and Jary 1995). A normative element is more or less present in the four critical approaches discussed earlier in this chapter, for example feminist theory is critical of practices and processes that oppress the (value) that women should be free, and Green theory is critical of practices which impede the realisation of (the value of) sustainability. This section seeks to make clear the values that underlie this thesis' critical green perspective, where the primary value is that of 'peace'.

Stating the normative position that underlies this thesis is necessary because "the credibility of social science research rests to an important degree on the explicitness with which we identify our values and how they affect what and how we analyse. There is simply no such thing as value-free research" (Gurtov 1991: xiv). A clear set of values enables a normative style of critique in which the present can be assessed relative to a set of ideals. Morrow calls this 'normative argumentation' and points out that rather than being irrational or irregular, it actually occurs in everyday practice and is a very rational technique of critique and persuasion: "we continuously uphold normative or value propositions that are entirely unproblematic and without doubt rational in every sense: children should not play with fire; fraud is unjust" (1994: 239). Further, as the postpositivist critique has downgraded formal empiricist and positivist rationality it has upgraded the purposefulness and explanatory functions of normative critique (Morrow 1994). A statement of values is also necessary because it makes the political agenda of the research more transparent. This thesis considers that at its

core 'politics' is (and should always be) the business of deliberation and negotiation of 'the Good'.[19] In this sense, then, the normative position being explicated here is not so much a self-evident universal truth, but serves instead as a normative starting point for this thesis, and as a starting point for ongoing debate which can proceed on a clear understanding of the politics of this thesis.

The normative position that underlies this thesis' 'critical green perspective' can be surmised as a concern for 'peace'. According to Galtung's classic formulation, peace is "the absence of personal violence and (the) absence of structural violence" (Galtung 1969: 183). Violence is that which impedes people from realising their potential: "violence is present when human beings are being influenced so that their actual somatic and mental realisations are below their potential realisations. Violence here is defined as the cause of the difference between the potential and the actual, between what could have been and what is" (Galtung 1969: 168). So violence is much more than causing physical harm (direct violence), it is also the absence of social justice and includes the monopolisation and manipulation of knowledge (indirect violence). Peace is therefore very much about the melioration of power. Power too, has this direct and indirect characteristic, as indicated by Giddens:

> Power may be at its most alarming, and quite often its most horrifying, when applied as a sanction of force. But it is typically at its most intense and durable when running silently through the repetition of institutionalised practices (Giddens 1985a: 9).

Peace therefore has a negative and a positive dimension. Negative peace refers to the absence of direct violence that causes physical harm, and positive peace refers to the absence of *structural* violence manifested as the uneven distribution of power and resources.[20] Negative peace is reactive in nature in that it seeks the cessation of actual or impending conflict in the near term. This is most frequently interpreted as 'peace as the absence of war', a view which so dominates contemporary understanding of peace that Enloe writes "the dichotomy

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[19] A view vastly at odds with the practice of governance in all countries, and equally at odds with the way political decisions are made in contemporary times - that is on the basis of instrumental or economically rational criteria.

[20] According to Gleditsch, the concept of structural violence became so successful in the 1970's that it came to include any social ill, and so eventually "self destructed" (Gleditsch 1998: 385). But if this implies working only with uncontaminated concepts, then new concepts shall have to be frequently and perpetually developed. If Gleditsch was to work with only pure and robust concepts then he would not be able talk of 'peace' or 'security'. Gleditsch seems to miss Derrida's point about meanings not being fixed, and it points to the very nature of concepts and their contestation, including concepts such as environmental security. These concerns recur in Parts II and III of this thesis.

(war/peace) has been so widely assumed as obvious, logical, and true that peace has gotten the short end of the theoretical discussion" (1987: 538). Peace can be literally interpreted as 'anti-war', enabling military personnel to refer to themselves as 'in the business of peace' or 'peace planners' (Toffler and Toffler 1995). Positive peace, on the other hand, is proactive in nature. It seeks to remove the underlying structural imbalances that present risks and vulnerabilities to people in the short as well as long term. Galtung (1969) notes that negative and positive peace are contiguous with each other, at least in theory. However, the competing uses of the word 'peace' in the twentieth century have made its meaning ambiguous; it can be and is deployed in ways that are very much anti-peace.

Integral to a meaningful understanding of peace is an appreciation of justice.[21] A minimum conception of justice includes the right to basic human needs such as clean water, healthy food and adequate shelter, hence Armengol expresses peace as "the absence of any form of violence that might prevent the satisfaction of any basic human need" (Armengol 1991: 119). In 1948 the General Assembly of the United Nations adopted and proclaimed the Universal Declaration of Human Rights which still stands as an internationally sanctioned expression of peace and justice (United Nations General Assembly 1948).[22] It contains 30 articles which sketch the dimensions of an encompassing notion of peace, including:

> All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood (Article 1).
>
> Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status...(Article 2).
>
> Everyone has a right to life, liberty and security of person (Article 3).
>
> No one shall be held in slavery or in servitude (Article 4).
>
> No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment (Article 5).

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[21] Rees (1995) talks of 'humanity' as a complementary but alternative notion to justice. Humanity involves "values of community, of sharing and caring, of partnerships and interdependence", it "implies a statement about quality of life" which recognises "an interdependence of environment, society and economy", and is "multidisciplinary, multicultural and multinational" (Rees 1995: 290 - 299). This seems to be an extremely useful conceptualisation that may help skirt some of the more complex aspects of 'justice'. However, because justice is the more common parlance, and because this thesis seeks to have some resonance with the notion of 'environmental justice', it maintains the use of 'justice'.

[22] At the time of writing a case can be made that virtually every one of these rights has been contravened in contemporary (industrial and 'developed') Australia.

Everyone has the right to recognition everywhere as a person before the law (Article 6).

No one shall be subjected to arbitrary arrest, detention or exile (Article 9).

Everyone has the right to freedom of thought, conscience and religion... (Article 18).

Everyone has the right to freedom of opinion and expression ... (Article 19)

Everyone has the right to freedom of peaceful assembly and association (Article 20).

Everyone has the right to take part in the government of his(her) country, directly or through freely chosen representatives (Article 21.1)

Everyone, as a member of society, has the right to social security and is entitled to realization ... of the economic, social and cultural rights indispensable for his(her) dignity and the free development of his(her) personality (Article 22)

Everyone has the right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment (Article 23.1)

Everyone, without discrimination, has the right to equal pay for equal work (Article 23.2)

Everyone has the right to form and join trade unions for the protection of his(her) interests (Article 23.4).

Everyone has the right to a standard of living adequate for the health and well being of him(her)self and of his(her) family including food, clothing, housing and medical care... (Article 25.1)

Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages (Article 26.1)

Everyone is entitled to a social and international order in which the rights and freedoms set forth in this Declaration can be fully realized (Article 28).

Everyone has duties to the community in which alone the free and full development of his(her) personality is possible (Article 29.1).

(United Nations General Assembly 1948)

Likewise at a 1976 international conference of jurors, politicians, sociologists and economists, a Universal Declaration of the Rights of Peoples was produced which "consecrates the rights of self-determination, of protection of the environment, of control of natural resources, and of the protection of minorities" (in Falk et al 1982c: 432). This declaration lists numerous basic group rights which indicate some further parameters of 'peace', some of these include:

The right to the respect of national and cultural identity,

The right to retain peaceful possession of territory,

The right to be free from colonial or foreign domination, whether direct or indirect, and from any racist regime,

The exclusive right to administer natural wealth and resources,

> The right to participate in scientific and technical progress which is the common heritage of (wo)mankind,
>
> The right to pursue economic development freely without foreign interference,
>
> The right to speak one's own language and to maintain one's own culture,
>
> The right to a group's artistic, historical and cultural wealth,
>
> The right to not be imposed upon by an alien culture,
>
> The right to improvement, conservation and protection of the local environment,
>
> The right to make use of the common heritage of (wo)mankind including the high seas, the sea-bed and outer space,
>
> The right to the same rights as other citizens in private and public life without discrimination.
>
> (The Universal Declaration of the Rights of Peoples, pp 432 - 434 in Falk et al 1982c)

Listing rights in this way is highly problematic as certain rights may conflict or be covered in numerous ways and are themselves subject to differing interpretations. However, the principle of positive peace is made clear enough in such declarations. If interpreted in a fair manner the adherence to such rights would bring about a far more peaceful and vastly different world than the one in which we live at present.

Peace should not be seen in highly iterative or quantifiable terms. It is a sentiment, a "commitment to action" and a goal to always strive towards; peace is a process that should be able "to reproduce itself" (Dower 1995: 22). Collingwood encapsulates the idea:

> Peace is a dynamic thing; a strenuous thing; the detection, even the forestalling, of occasions for quarrels; the checking of the process by which the non-agreements thus constantly generated harden into disagreements (not without the use of force) and are softened into non-agreements; and the dialectical labour whereby occasions of non-agreement are converted into agreement (Collingwood 1992: 334).

Peace as a process means the unfettered participation of people in making and remaking the world as they choose - a concern of the four critical approaches considered in this chapter. Indeed it is arguably on the subject of peace so defined that these approaches converge in highly complementary ways.

Important in the formulation of peace is the need for some relative certainty about the continued provision of basic needs, in other words there needs to be some degree of 'security' for there to be peace. Peace is therefore an object of security, as well as a means by which security is obtained: "the commitment to the

way of peace is precisely the means, or at least the most important means, to achieving .. security" (Dower 1995: 22). Furthermore, to threaten to do injury or to threaten to withdraw or interrupt basic needs is to create *insecurity* and so is *violence* in that it impedes a person from realising their potential.

There are a range of values that are associated with the meta-value of peace. Falk sees peace (or more accurately his conception of 'world order') as having four (value infused) criteria; "the minimisation of collective violence; maximisation of economic well-being; maximisation of social and political justice; and maximization of ecological quality" (1982a: 161). These serve as an analytically useful basis for appraising actions in the name of 'peace'. A comprehensive account of values for peace comes from Gurtov, who lists numerous personal and institutional values that attend the core value of 'peace', including; community, compassion, co-operation, diversity, enoughness, equality, harmony, honesty, integrity, non-violence, responsibility, spirituality, trust, vulnerability, accountability, appropriate technology, collectivity, participation, shared power and voluntary simplicity (Gurtov 1991: 15).

There is no absolute or rigorous conception of peace that can be asserted to be better than another, but there is a general sense and degree of consensus about what constitutes peace and this has (hopefully) been conveyed. Similarly, there will never be one optimal way to bring about peace, it requires a host of complementary concepts and strategies, one of which may be environmental security.

Peace has intuitive resonances with the environment, for example the Rio Declaration on Environment and Development recognised that "Peace, development and environmental protection are interdependent and indivisible" (Principle 25, UNCED 1993). Nevertheless, the theory and practice of explicitly linking environment and peace is not well developed. In this thesis the concept of 'environmental security' is one attempt to further our understanding of the ways in which peace and environment are related. In this way this thesis understands itself to be an essay in peace at the same time as being an exploration of the concept of 'environmental security'.

2.5 Conclusions

This chapter has outlined the key elements of a critical green perspective which informs the remainder of this thesis, and which can be found in other, established critical theories. These common elements include a concern for history, a concern for self-reflectivity, an holistic and interdisciplinary approach, an emancipatory function, a dialectical outlook, an imaginative and utopian approach, and the presence of some underlying normative position (in this case a concern for peace).

This chapter has established the case for an historical perspective on the grounds that the present is the product of particular and distinctive historical circumstances, and so cannot be understood independent of them. An historical appreciation is also consistent with the dialectical perspective. The following chapter adopts an historical approach to the problems of environmental degradation and environmental insecurity.

Chapter 3. A Trajectory of Insecurity

3.1 Introduction

The previous chapter has established the case for history on the grounds that the present is entirely a product of its antecedents, and so cannot be understood independent of them. Despite this, there is still a tendency towards temporal ignorance when addressing the problems of the present; it seems that modernity erases recognition of the past (Giddens 1990, Hobsbawm 1994). However, without an appreciation of history we approach present and impending crises without the principal benefit of culture - that of accumulated knowledge. History also enables meaningful speculation on the future: "without a long running start in history, we shall not have the momentum needed, in our own consciousness, to take a sufficiently bold leap into the future" (Mumford 1961: 11). In addition, offers a source of optimism, it helps us to know that the world was once different, and might be so again (Frank 1985).

This chapter seeks to understand the historical processes which gave rise to the problems of environmental degradation and environmental insecurity.[1] This is necessary if this thesis' aim of critically examining the concept of environmental security is to be satisfied. The literature which can be readily identified as pertaining to 'environmental security' is almost without exception ahistorical, so providing an historical account is a unique contribution. Because the problem of environmental insecurity is understood in this thesis in very broad terms, and is seen to be interrelated with a wide array of other insecurities, the history or 'trajectory of insecurity' that occurs here is also very wide ranging.[2]

This chapter seeks to identify some key themes and processes that are considered to be of particular relevance, and so does not aspire to a complete understanding of the historical origins of environmental degradation and insecurity. It is therefore very much a 'macro history' (Boulding 1992a). Objective knowledge of the past is impossible, and all history is, in a sense, theory. Further, there can never be 'a' complete history, "there have to be as many parallel

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[1] Some ideas in this chapter were explored in Barnett 1997a.

[2] Again, because of ANU dissertation guidelines which impose a word limit, some related aspects have been relegated to appendix II. There is also extensive use of footnotes.

narratives as there are people, communities, societies, religions, states and ways of life" (Toynbee 1966: 88). This chapter seeks to *synthesise* certain relevant narratives to elicit common understandings. Hence this chapter is not a study of history drawing on primary sources; it is a particular interpretation of history based on a synthesis of others' interpretations, combined with the normative stance and intellectual purpose of this thesis. [3]

In short, this chapter is not intended as a review of competing historical narratives, nor does it claim to offer any original historical insights. The aim here is to synthesise others' interpretations of history to present a history of environmental insecurity. A secondary aim is to use 'insecurity' as a theme to interpret history.[4] This chapter is not without certain biases, mostly arising from the author's understanding of society which inescapably influences the particular historical narrative that follows (see Petulla 1985). Bias also emanates from the predominantly Western and masculine emphasis of the other macro histories from which this chapter draws (Boulding's *The Underside of History* helps compensate for this). There are also difficulties in understanding and interpreting the past using contemporary forms of language which reflect the particular culture and world views of *our* age (Bookchin 1982).

A degree of historical credibility is sought by a deliberate reading across perspectives and disciplines, a preference for 'academically credible' texts, a conscious effort to remain true to sources, and an emphasis on broad trends. Thus the analysis seeks to lessen dependence on any single approach or perspective. This helps ensure that what is common is indeed common, but raises the recurrent problem of balancing depth and breadth, thus: "one must choose between not advancing at all and being dragged down into a bottomless bog of speculation. Let the reader be warned.." (Mumford 1961: 70).

This chapter is structured according to Boyden's *Western Civilisation in Biohistorical Perspective* (1987) where human history is loosely divided into four

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[3] This chapter might be understood as 'environmental history'. The bulk of 'environmental history' published to date focuses on changes in the biosphere from a biophysical perspective. There is less material available which focuses on the interaction between human culture and the biosphere. The difference is one of detail, the former discusses environmental change whereas the latter discusses the relationship between environmental and social change, or "the dialectic between nature and culture, the interaction of humans with the rest of nature through time" (Bailes 1985: 5). This chapter conforms more to this latter type of environmental history.

[4] This is considered to be a relatively unique approach, although security/insecurity is used at times by Bookchin (1982) and Rifkin (1991).

ecological phases.[5] Others such as Mannion (1991), McMichael (1993), Miller (1994), Mumford (1961), Ponting (1991) and Toynbee (1966) loosely fit into the four phase model. The first phase concerns the earliest and longest stage of human history up until the advent of agriculture some 10,000 years ago. This first phase is called the hunter-gatherer phase. The second phase - the early farming phase - began approximately 10,000 years ago with the gradual emergence of settled agricultural communities. The third phase - the early urban phase - began approximately 5,000 years ago with the emergence of cities. The last ecological phase of history - the industrial revolution or 'high energy phase' - began around 200 years ago (Boyden 1987). It is important to note the shortening time spans of each successive phase. Each of these four phases is considered in turn. The availability of information and the acceleration of history means that more attention is given to progressively later stages. It should be stressed that the transition between each phase occurs incrementally. The following discussion generalises across time and space to some extent, but to reiterate, the analysis seeks not precision, but rather to identify general trends.

3.2 The Primeval (Hunter-Gatherer) Phase

The hunter-gatherer phase begins with emergence of the genus *Homo erectus* (the ancestors of Homo sapiens sapiens) some 1.5 to 2 million years ago, and nominally ends with the emergence of settled agriculture some 10,000 years ago (Boyden 1987).[6] The hunter-gatherer lifestyle was the only way of life for tens of thousands of generations. Two basic generalisations about this phase are valid: all hominids were relatively nomadic, and they gathered and foraged for their food.[7] For the most part these early humans "were integral rather than dominant ecosystem components" (Mannion 1991: 80).

One of the principal sources of uncertainty for hunter-gatherers was the availability of food. Food supply was not sufficiently regular that hunter-gatherers could settle in one place. In times of drought or flood the group's chances of survival were greatly increased by their ability to move to new and more

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[5] The use of 'phases' should not be taken to infer the complete passing of each preceding phase, each still exists to some degree.

[6] Modern humans - Homo sapiens sapiens - are thought to have evolved some 100,000 years ago (see appendix II).

[7] It should be stressed that the following observations are highly generalised because "prehistory is a big place" (Wall 1994: 21).

hospitable environs and to refuge areas. So, adaptability through mobility provided food security. Hunter-gatherers ate from all levels of the food chain including plants, tissue from herbivorous animals and tissue from carnivorous animals. However, as a general rule, our ancestors derived most of their somatic energy from sources lower down the food chain (plants) (Boulding 1992a).[8] Compared to modern Western diets the intake of animal fats was low. An important aspect of the hunter-gatherer diet was the diversity of foods consumed. This was conducive to good health. It also ensured stability of supply as there was no over-dependence on any single plant or animal which might not be regularly available due to seasonal and annual fluctuations. Whole group participation in food gathering and preparation also contributed to reliability of supply. There was equality in food availability among members of the group. Boulding estimates that women supplied up to 80% of the diet by weight and had a wealth of knowledge about plants, and says that although less risky than hunting, female food procurement had a "high survival value" (Boulding 1992a: 65).

In addition to uncertainty about food availability, nature (external) posed other risks. The risk of death and injury from accidents, infections, other animals, natural disasters, floods and droughts was ever-present (Tuan 1979). The absence of permanent shelter made the effects of climate pronounced. There was a much greater risk of serious injury and death at all stages of the life cycle. The constant fluctuations in the world around the primeval person equated to an ever changing mosaic of risks.

Hunter-gatherers lived in small groups. Average group size was around 25 people, but varied according to food availability. In times of relative abundance there could be up to 100 people in the group (Boyden 1987, Boulding 1992a). Hunter-gatherers made conscious efforts to keep the size of the group in balance with food availability (Miller 1994, Ponting 1991). McMichael estimates that fertility in these times was in the order of 30 births per 1,000 people per annum, and that women had 5 children on average (1993: 113). The global population of hunter-gatherers late in this phase is estimated to be in the order of 5 million

[8] Somatic energy is "that energy which is expended, through metabolic processes, within living organisms" (Boyden et al 1990: 335). So, somatic energy is the energy used by plants and animals. Extrasomatic energy is "that energy which flows in and is utilised by a human community and which is not expended through metabolic processes within living organisms" (Boyden et al 1990: 335). So, extrasomatic energy includes energy sources such as fire, solar radiation, wind power and fossil fuels.

people (Boyden 1992). Hunter-gatherers lived in an estimated 100,000 or more groups in a wide range of habitats, but most of these were fertile and climatically hospitable (Sack 1986). Population densities were extremely low by modern standards. There was little day-to-day interaction between groups, but there were occasional ceremonial gatherings and there was some inter-group trade.

Hunter-gatherers tended to live shorter lives than modern humans, but for the duration of life they were less afflicted by disease:

> Primeval people are mainly free from such infectious diseases of civilisation such as cholera, typhoid, typhus, measles, smallpox, influenza and the common cold ... organic disorders like appendicitis, cardiovascular disease and cancer are believed to be uncommon (Boyden et al 1990: 41).

Although they were less likely to be sick than modern humans, once sick or injured hunter-gatherers were more likely to die (Boyden et al 1990). Nevertheless, the natural environment provided primeval humans with all that they required; it "satisfied the survival, health, and reproductive needs of our ancestors for many thousands of generations" (Boyden 1987: 59).

Compared to modern society, hunter-gatherer groups had minimal impact on their environs, leading to Diamond to suggest that they "practised the most successful and long-persistent lifestyle of the career of our species" (Diamond 1991: 172). The use of tools became more sophisticated after 40,000 BC, but the use of resources such as stone and wood to make these was negligible in ecosystem terms (Boulding 1992a, Boyden 1992, Toynbee 1966). Better tools enabled better hunting and foraging practices, and it is widely suggested that primeval humans contributed to the extinction of a range of megafauna late in the Pleistocene era (Boyden 1987, Brown 1996, Ponting 1991).[9] However, the most significant impact of early humans on nature was through the controlled use of fire. There is evidence to suggest that throughout prehistory fire was used to drive game, to protect against predators, to clear wooded areas to create grasslands more conducive to large game, to provide warmth, and to cook (Boyden 1987, Mannion 1991, Ponting 1991, Boulding 1992a). Fire was the only source of extrasomatic energy used by hunter-gatherers, and its deliberate use distinguished humans from other animals (Boulding 1992a). In terms of energy use (arguably the best indicator of ecological demand), a primeval human used, on average, 3.5

[9] In a recent paper Langton (1997) is highly critical of Flannery's (1994) suggestion that Aboriginal Australians eliminated megafauna. It is (rightly I think) argued that this (unproven) notion has been used politically to problematise and devalue the claim of indigenous Australians to stewardship of traditional lands.

Gigajoules/year of extrasomatic energy (Dovers 1994: 14). This means that the average hunter-gatherer had at her disposal an amount of extrasomatic energy roughly equal to her own somatic energy (one Human Energy Equivalent) (Boyden et al 1990).

Hunter-gatherers did not 'own' land. There is little evidence of territorial behaviour despite established patterns of movement (Sack 1986). Encroachment pressures were minimal as population densities were low and 'space' was virtually unlimited. Therefore there was little need to defend land from others. Indeed the very notion of 'possession' does not appear to apply to hunter-gatherer groups: "the unconscious emphasis is on use itself, on need that is free of psychological entanglements" (Bookchin 1982: 50).

The most important institution of hunter-gatherer society was the family. With the family as their nucleus groups of people operated together, and relied on each other for survival. Membership of the group was not necessarily restricted to kin. Sharing and reciprocity were integral to group survival: "one frequently hears that no one starves in the primitive community unless everyone starves" (Sack 1986: 56). As social beings hunter-gatherers experienced companionship and lived by the need for approval by the in-group (Boyden 1987). There was, it seems, a rich social fabric providing the intangible needs of emotional support, love, companionship, social interaction, personal involvement and responsibility. Boyden asserts that "by and large, 'negative' feelings, such as a sense of alienation, sense of anomie, sense of loneliness, sense of boredom, and of resentment do not appear to be common features of primeval people under usual circumstances" (Boyden 1987: 74).

It is generally thought that in most hunter-gatherer groups males and females had equal social status (Bookchin 1982, Diamond 1991). There was some gender and aged based division of labour, but there was little occupational specialism compared to modern society. The basis of politics was fundamentally consensual and egalitarian. This social solidarity and the inseparability of early humans from nature leads Bookchin (1982) and Merchant (1982) to describe the hunter-gatherer community as 'organic'. Bookchin suggests that in such a community there is:

> An outlook toward life that visualised people, things, and relations in terms of their uniqueness rather than their 'superiority' or 'inferiority' ... individuals and things were not necessarily better or worse than each other; they were simply dissimilar. Each was prized for itself... the concept of

> individual autonomy had not yet acquired the fictive "sovereignty" it has achieved today (Bookchin 1982: 44).

The onset of an ice age around 35,000 years ago made hunting an increasingly important means to procure a reliable supply of food (Tuan 1979). Bands of hunters operated in larger and more organised groups to drive and capture larger forms of game. As hunting became more important as a survival strategy men slowly came to specialise in hunting and women increasingly partook in gathering (Boulding 1992a). However, for most of this long phase hunting was confined to small animals caught not far from temporary camps, so role differentiation was less pronounced than today (Boulding 1992a).

In the popular imagination it is common to assume that there was a high degree of intra-human violence and brutality in hunter-gatherer societies.[10] However, there is widespread agreement in the literature that hunter-gatherer societies were peaceful and that violence occurred infrequently and sporadically (Boulding 1992a, Boyden 1987, Mumford 1961, Sack 1986, Toynbee 1966). Tuan suggests that:

> The available archaeological evidence, sparse as it is, supports this calm domestic picture, and from what we know of primitive human foragers of modern times a life unburdened by conflict and the stressful demands of survival is indeed possible (Tuan 1979: 46).

There were few reasons for violence in the primeval phase. The general absence of hierarchy and property, and the relative weakness of material culture served to eliminate many potential sites of conflict. Conflict was most often resolved by non-violent means. The most extreme antisocial behaviour was normally dealt with by expulsion from the group (Tuan 1979, Boyden 1987). So:

> In sum, the evidence from recent hunter-gatherer societies does not support the notion of primeval society being characterised by continual violent hostilities between neighbouring bands. Nor does this idea make much biological sense, in that constant intraspecific killing is not a feature of other mammalian species in their natural habitats, and on evolutionary grounds, we would not expect it to be so (Boyden 1987: 65).

This is not to say that there was no violence in hunter-gatherer societies. What can be said with confidence, however, is that the means to do violence were limited

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[10] The assumption of brutality is most often driven by the need to excuse contemporary violence as being innate in the human species. The most common set of assumptions revolve around Hobbes' 'brutish' man in 'raw nature'; ie that historically humans were in a state of constant violent conflict (*Leviathan*, Tuck 1991). This line of reasoning gives rise to socio-biological determinism. Such views exemplify the way 'history' is subjectively manipulated to serve ideology.

and highly personal, and there was no warfare in the sense that one group deliberately planned and prepared to enact violence on another. In short, "Palaeolithic people were not the ignorant, fierce brutes that civilized humans imagine, a fact that places the onus upon us .. to reassess our self-concept" (Oelschlaeger 1991: 6)

As the hunter-gatherer phase progressed the building of shelters and the use of clothing became a more permanent and widespread feature of life (Goudie 1986). Boulding (1992a) considers that factors contributing to the progressive settlement of primeval humans included the steady enlargement of the female pelvis which reduced running speed, the increasing success in hunting strategies which reduced the need to gather food over a wide region, and the ability of a 'home base' to allow for nurturing of the young and care of the infirm. Mumford (1961) considers that the worship of the deceased contributed to a fixing of people in the places where their ancestors were buried. Burial sites served as meeting places and camps, as did certain permanent features in the landscape such as perennial springs and food-rich estuaries. This gradual settlement contributed to the evolution of early agricultural societies.

Summary

According to anthropologist Paul Radin:

> If I were asked to state briefly and succinctly what are the outstanding features of aboriginal [hunter-gatherer] civilisations, I, for one, would have no hesitation in answering that there are three: the respect for the individual, irrespective of age or sex; the amazing degree of social and political integration achieved by them; and the existence of a concept of personal security which transcends all governmental forms and all tribal group interests and conflicts (cited in Bookchin 1982: 56).

The capacity of primeval humans to impact on nature was insubstantial by contemporary Western standards. Hunter-gatherers survived through a keen awareness of their surroundings and absolute dependence on the in-group. Hunter-gatherer societies were more egalitarian and non-hierarchical than modern society, and functional specialisation was rare. In terms of material possessions, food supply, health and social status, individuals in hunter-gatherer societies were all reasonably equal. There were extreme hazards associated with life in primeval conditions, the environs wholly determined security and survival. Human well-being was thus both provided for by nature and yet was uncertain because of

natural perturbations. Humans were the principal source of security, there was little insecurity generated among humans themselves.

3.3 The Early Farming Phase

The early farming phase began at least ten to twelve thousand years ago, and seems to have occurred in more than one location (Boyden 1987, Boulding 1992a, Diamond 1991). This phase includes all farming societies engaged in agriculture and horticulture which do not use fossil fuels as a source of energy. The basic function common to this phase is the cultivation of edible plants and the breeding of animals so "that a higher proportion of chemical energy fixed by photosynthesis in a given area flowed through a human population" (Boyden 1987: 83). The early farming phase marked the beginning of "a progressive intensification of the culture-nature interplay" (Boyden 1987: 83). It involved both "permanence and continuity of residence" and "control and foresight over processes once subject to the caprices of nature" (Mumford 1961: 21). Overall, the transition from the hunter-gatherer phase to the early farming phase occurred very gradually (Diamond 1991).

A number of reasons are advanced to explain the emergence of agriculture. Some explanatory variables are: the accumulation of knowledge about seeds and plants as they were observed to recur in annual camp sites (Boulding 1992a, Boyden 1987); the increasing fecundity made possible by the end of the ice age (around 15,000 years ago) (Boyden 1987, McMichael 1993); and increasing population pressure (Mannion 1991, Ponting 1991, Boulding 1992a). Boulding considers that the most important technological factor was the development of containers for storing food, including seeds, which facilitated the seed-technology necessary for agriculture (Boulding 1992a). Regardless of cause and effect, all of these factors probably coincided to create the agricultural revolution, an event which "made possible all the subsequent developments in human society" (Ponting 1991: 36).

The transition to farming was not "an inevitable or lawful process", but one which was produced by the search by hominids for a more reliable and regular source of food (Bennett and Dahlberg 1990: 70). Agricultural practices were not initially necessary for human survival, yet society nevertheless organised itself

around such practices and came to rely on them for continued survival. Boyden refers this growing dependence on the seeding of plants and the breeding of animals for food as the first significant example of 'technoaddiction' (Boyden 1987: 89).[11]

The slow emergence of settled communities has also been referred to as the 'domestic transition' as this involved a domestication of animals and plants as well as people (Boyden 1987, Mumford 1961). Many animals including cows, sheep, goats and dogs were domesticated between 12,000 and 8,000 years ago, however plant domestication appears to have occurred prior to animal domestication (Mannion 1991). For the most part, the early farmers produced only enough food to meet their subsistence needs, however food production was plentiful enough to feed larger numbers of people per a given area (Miller 1994). This resulted in a slow increase in human numbers, meaning that there was less land available for shifting agriculture.[12] With population growth came a shift to static, steady-yield farming practices. The need to sustain yields from a given plot of land contributed to the development of new farming practices such as the oxen drawn plough (developed around 7,000 years ago) (Miller 1994). Manure also began to be used as a fertiliser to maintain the equilibrium between nutrient extraction and replacement in the soil. This further enhanced food supply and so further increased population growth and population densities. This cycle of increased food supply and increasing population "was particularly dependent on the discoveries, skill, and ingenuity of women as food gatherers and processors" (Boulding 1992a: 88).[13]

Whereas in hunter gatherer times population densities varied from 0.2 to 2 persons per square kilometre, in early farming societies they ranged from 25 to 1000 persons per square kilometre (Boyden et al 1990: 47). In terms of human health, increased population density was a mixed blessing. Now, the disabled and the debilitated had a secure base and could contribute in new ways to community survival (McMichael 1993). However, as people came to live closer together, and as they mixed more frequently with other animals, new infectious agents were

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[11] Technoaddiction is defined as: "the tendency of human populations to become dependent for health and survival on technological devices which were not necessary for health and survival when they were first introduced" (Boyden et al 1990: 336).

[12] A practice that was ecologically sustainable as it allowed depleted lands to regenerate.

[13] In some circumstances increased food production allowed for larger populations, but it seems equally likely that in other cases growing populations triggered more intense farming practices. However, whatever the nature of the causal relationship, the end result is large populations of human beings entirely dependent on farming for their survival (Boyden 1987).

introduced, and these were more easily transmitted (Diamond 1997, McMichael 1993). As a result, the lifespan for many people was considerably reduced (Diamond 1991). Fertility rates in agricultural communities increased by 50% over hunter-gatherer times, and women were typically bearing 10 children (McMichael 1993). However, death rates also increased, so the rate of population increase was slow.

The shift to a farming based society did not significantly change the use of extrasomatic energy. Although on an aggregate level more extrasomatic energy was used as there were more people, on a per capita basis the level of use was not significantly different from primeval times. Fire was still the most commonly available source of extrasomatic energy; it was used for cooking, heating and for land clearance. Later in the phase wind and water mills were developed, and animals were increasingly used, all of which supplemented human labour. At this later stage the extrasomatic energy available to humans increased to 2 Human Energy Equivalents (HEE) per day, which, in addition to the individual's somatic energy meant that total energy use was 3HEE per day (on average per person) (Boyden and Dovers 1997). This was an increase of one HEE per day above hunter-gatherer times. These new applications of extrasomatic energy were largely non-polluting.

The domestic transition heralded a new suite of ecological impacts. Farming involved land clearance, manipulation of soils, and the eradication of unwanted plants and animals. This caused localised redistributions of certain species of plants and animals.[14] For the first time there was selective reproduction of certain plant and animal species, causing changes in the genetic constitutions of some species of plants and animals. With this, humans became significant controllers of the environment (Mannion 1991). Cultivated forms of cereals were among the first plants to be genetically varied from their natural forms, particularly through control of the times and types of seed released. There was also deliberate selection of individual animals for breeding to reproduce desired characteristics in offspring, creating what Boyden's calls "culture-induced genotypes" (1987: 100).

For most of the early farming phase the tools and techniques used were simple, land areas under agriculture were small, and so, in aggregate, there was minimal impact on the environment (Miller 1994). With the passage of time came

[14] Some species, such as rats, thrived in the changed ecological conditions whilst others, such as large predators, suffered (Boyden 1987).

new tools and techniques, and crops became increasingly large and homogeneous. This had the effect of reducing biological diversity in the immediate environs of the farm. Stream diversion was an early form of irrigation (Bennett and Dahlberg 1990). The advent of monoculture and the slow development of irrigation combined to produce (sometimes intense) localised soil salinisation and acidification, hydrological imbalances and nutrient depletion (Mannion 1991). Monoculture deliberately sought to replace diverse ecosystems with a single plant species. This increased dependence on a single crop for food supply, and humans became vulnerable to crop failure (Diamond 1991). Monoculture also increased the likelihood of infective agents or parasites as it created concentrations of host plants and favourable conditions for the spread of pathogens and microbes (Boyden 1987). In terms of food security then, the domestic transition meant that more was able to be produced, and agriculture reduced the need to engage in risky hunting activities. However, the decreased mobility and increased dependence on a given locale meant that in the event of crop failure, individual and group survival was seriously jeopardised.

The family was the basic societal unit in early farming societies. In the Neolithic village the household worked the land assigned to it by consensual community decision, there was no ownership or alienation of the land in the way that occurs in modern society (Sack 1986, Bennett and Dahlberg 1990). Village culture was one that stressed "the primacy of the community, the collective will of the people, and the idea of internal regulation and consent" (Merchant 1982: 76). Each member of the Neolithic village "is a whole human being, performing all the functions appropriate to each phase of life" (Mumford 1961: 24). There was little occupational specialism, although there was some division of labour according to gender and age. Communities grew and expanded through marriage, the ritualistic adoption of strangers, and links with neighbours formed through trade and totemic societies (Bookchin 1982).

The early agricultural way of life "was almost from the start a woman's world. She would mark out the fields for planting because she knew where the grain grew best, and would probably work in the fields together with other women of the band" (Boulding 1992a: 98). Women not only conducted the planting and processing of food, they guided social relations and determined the organisation of land, housing and food: "she alone becomes the very protoplasm of sociality" (Bookchin 1982: 53). Despite the matrilineal character of the Neolithic

community, control was not exercised in such a way as to confer personal advantage. The Neolithic group was essentially non-hierarchical and there is thought to have been mutual respect shown between males and females, and the young and the old (Boulding 1992a). However, with increasing population pressure later in this phase, administrative and distributive tasks became more important, and these seem to have been assumed more by men and by elders who claimed this as their part of the division of labour (Bookchin 1982, Boulding 1992a). This gradually lead to a narrowing of the rights of women to resources, and a deterioration of their status and opportunities (Boulding 1992a, Diamond 1991). Bookchin (1982) suggests that the authority of men came about through the organisation for defence and to distribute the food surplus. The implication is that power was not usurped from the female, but that it had hitherto not existed and was created by men. Even in the slowly stratifying community, however, there were no 'classes' as such, and the prestige that comes from legitimately serving the community's needs seems to have been the original motivation for leadership (Bookchin 1982). 'Power' in this weak form was more episodic than institutional (Bookchin 1982).

For the most part there were not significant differences in the life conditions of individuals in early farming societies. Certainly within the in-group there was equality with respect to food availability and patterns of health and disease. With settled life came the accumulation of material possessions, although these were still few and rights of possession were still by and large symmetrical. However, with time some differentiation occurred and so the roots of 'poverty' can arguably be traced back to this phase with the advent of differentially distributed 'property' (McMichael 1993, Sack 1986).

With the settlement of people in fixed places and the delineation of spaces for agricultural activity, there was an early form of territoriality.[15] However, the territory of the Neolithic village was created in the first instance not to control people, but more to control nature and to promote the union of the people. Boundaries were determined by geographical features and were flexible and adaptable according to ecological changes, and changes in group and family needs (Bennett and Dahlberg 1990). The need to tightly control the space of the Neolithic village increased as competition for land increased later in the phase

[15] Territoriality is defined by Sack as: "the attempt by an individual or group to affect, influence or control people, phenomena and relationships, by delimiting and asserting control over a geographic area" (Sack 1986: 19).

(Sack 1986). The Neolithic village marks an early and weak separation of humans from nature. Keeping the settled area free of weeds and foraging animals was constant and laborious work, and nature came to be seen as hostile and requiring vigilance to keep it at bay (Tuan 1979).

There was no systematic organisation of war nor any consistent pattern of warfare among early farming societies (Mumford 1961, Boyden 1987, Bookchin 1982, Boulding 1992a). Like the hunter-gatherer phase there were some acts of violence - the walls of Jericho around 8000 BC are sometimes cited as evidence of this. However, walls and defences were rare in Neolithic communities, and most early farming societies lived in peace with their neighbours, suggesting that violence is "not an inevitable consequence of agriculture" (Boyden 1987: 114). The act of violence was still of a highly personalised nature. People had to fight face-to-face using simple weaponry. The inability to extend control over large areas, the slowness of communication and transport, and the daily struggle to subsist in a given locale all constrained the ability of any single group to rise to a position of militant authority (Toynbee 1966, Leiss 1972).

Developments in agricultural practice allowed the generation of a food surplus in many societies. This meant that individuals could survive without participating in the food production process. In the early stages these individuals repaid the community through technological and organisational inventions which facilitated an even higher level of food surplus. In time a class of non-farming people who produced and traded in textiles and crafts emerged, eventually leading to the development of trading towns located on trade routes. The emergence of trade was facilitated not only by the production of surplus, but was necessitated by monoculture farming which lead societies to depend on each other for the provision of a range of foodstuffs. The aforementioned hazards of monoculture could be partly offset by trade among communities who by virtue of different location and crop production were not likely to be simultaneously struck by crop failure. Boyden refers to this reliance on other communities for provision of basic needs as a 'lengthening of chains of dependency' (1987: 115).[16] The domestication of the horse and the development of the cart late in this phase also enhanced the capacity to trade (Goudie 1986).

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[16] In agrarian societies these chains of dependency were very short and weak by contemporary standards, indeed for most of this phase small farming communities were self-sufficient (Boyden 1987).

Summary

The early farming phase saw humans develop a new capacity to influence nature such that food supply became on the whole more secure. This security was by no means absolute as regularity of supply was offset by vulnerability to crop failure. Other forms of security were also conferred by the small farming village, including an ability to ward off predators, better shelter from the elements and an improved ability to nurture the young and tend to the infirm. This security came at the cost of greater prevalence of disease, a progressive distanciation from nature, emergent forms of environmental degradation, and embryonic forms of social stratification.

3.4 The Early Urban Phase

The early urban phase began when the first cities appeared in the valleys of the Tigris, Euphrates and Nile Rivers around 5,000 years ago. It began to end with advent of the modern high energy phase beginning in Europe some 200 years ago. The 'city' was a new phenomenon, although smaller urban societies had long since existed. The degree of change from 'proto-city' ("spring, shrine, village, market, stronghold") to city was extremely incremental and gradual, as were transformations throughout this phase (Mumford 1961: 42). It should be remembered that throughout this time the bulk of the population did not reside in major cities.

The rise of cities can be attributed to the production of a food surplus which allowed some people to dwell elsewhere than the farm and engage in activities other than food production, such as trade in crafts and food. Mumford speculates that the evolution of the city was enabled by a transformation in the collective unconscious: "at some moment, it would seem, the local familiar gods, close to the hearth fire, were overpowered and partly replaced, certainly outranked, by the distant sky gods or earth gods." (Mumford 1961: 41).[17]

The early urban period heralded an unprecedented growth in human numbers made possible by increased agricultural output. Steady advances in

[17] Thus for Mumford the city is the material expression of the "magnification of sacred and secular power" (Mumford 1961: 42). All of these explanations for the emergence of 'civilisation' (a word which need not connote an improvement nor a displacement of barbarism) are speculative - the problem of causality vexes all historical narratives.

agricultural productivity were made initially through better organisation and larger applications of human labour, and the increased use of better cultivation techniques (Merchant 1982).[18] At the beginning of the phase there was in the order of 100 million people on the earth, 3,500 years later it had doubled to around 200 million, and by the 'end' of the phase it had increased to around 1000 million people (Boyden 1992: 104, Goudie 1986: 8). In the latter part of early urban phase world population was growing by 50,000 people per year (Boyden 1992: 107). Poverty was a key factor in this population growth (McMichael 1993). Later in this phase advances in public and private hygiene and improved nutrition helped to reduce death rates, however for a significant period birth rates did not fall, thus population grew at a rapid rate (Boyden 1987).[19]

Urban societies had an unprecedented impact on the environment. As the city's population grew so did its dependence on surrounding agricultural lands, leading to more intense agricultural practices. The need to supply more food within a transportable distance to the city resulted in large scale irrigation and fertilisation projects. This caused partial and at times complete degradation of ecosystems. The great floodplains where the first cities emerged were changed by widespread clearing of woodland, the draining of wetlands, large scale ploughing, long term salinisation and acidification of soils, erosion and subsequent water pollution (Kates et al 1990). Widespread environmental degradation jeopardised the health and well-being of the populations living within and around the city. This was a new level of environmental insecurity: "the threat of famine remained ever present", and "almost every adult .. knew the threat and often the reality of hunger" (Tuan 1979: 56 and 60). However, these problems were not uniform in all civilisations, that some continued suggests that these were able to sustain themselves over time. Ponting notes, for example, that the settlements in the Nile valley were a "striking example of a society establishing a sustainable balance between the natural environment and its demand for food" (1991: 83).[20]

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[18] For example, in Europe in the 14th century the application of fertilisers such as lime and seaweed became common place (Mannion 1991). New crop varieties were also developed.

[19] Advances in hygiene and sanitation were stimulated by the advent of the bubonic plague beginning in Europe in 1348. The plague was a particular pathogen that festered in poorly sanitised and dense populated areas. Up to 70% of some populations perished during the plague (Garraty and Gay 1981: 487).

[20] The case of salinisation of the once fertile Tigris and Euphrates river valleys in Mesopotamia is cited as a case of ecological degradation undermining security (Hughes 1994). Mannion suggests that the Mycenaen civilisation collapsed due to over worked agricultural systems and that many other ancient civilisations "may well have risen and

A new source of environmental pressure emerged with the development of more complex economies and the increasing importance of non-essential or luxury commodities (Boyden 1987). With this, the per capita rate of resource use increased. The city accelerated deforestation with its increased demand for timber for construction and fuel. Later in the early urban phase added pressure was put on the forests (notably of Europe) by the need to support larger mining activities, for fuel for slowly developing 'industrial' activities such as metallurgy (beginning in the agricultural phase), and for shipbuilding.

Throughout the early urban phase there was a continued struggle to bring more energy under human control. Initially, the energy for large infrastructure projects (temples, city defences, irrigation and roads) came from the application of larger numbers of people in carefully coordinated and regimented labour gangs (Ponting 1991). Animals were increasingly used as a source of labour. The burning of wood as fuel also increased substantially, as did the harnessing of wind and water power.[21] Oils began to be burned and later in the phase coal was increasingly being used as a substitute for increasingly scarce timber .[22] The burning of timber, and more importantly coal, created local and regional atmospheric effects. Between the birth of Christ and 1650 the world population increased its use of extrasomatic energy fourfold, and its use of somatic forms of energy doubled (in line with population growth) (Dovers 1994: 15). From the beginning of the early cities to the start of the high-energy phase per capita extrasomatic energy use increased from 4 Gigajoules/year to 8 Gigajoules/year, or from 2 Human Energy Equivalents per day to 4 HEE's/day.

In the city there were new forms of social power that revolved around the warrior chief/king high priests, and merchants. [23] This new elite did not necessarily procure their power over the populace through the use of force. A hypothesis is that the populace freely gave of their resources and authority in return for collection, storage and redistribution of the food surplus (Sack 1986). It seems that

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fallen on the strength of their ability to manipulate food production and the new resources ... which ... facilitated agricultural intensification (1991: 102).

[21] The first large scale systematic use of water was in Egypt around 100 BC with the development of the automatic irrigation wheel (Ponting 1991).

[22] In 1550 English coal production was 210,000 tons, eighty years later it had risen to 1,500,000 tons (Ponting 1991).

[23] How this transfer of power transpired is a difficult question. The application of military power, initially used to defend the community, was at some point turned inward to control the community. Certainly, the extension of infrastructure and the organisation of mass labour occurred under the aegis of the military (Bookchin 1982, Mann 1984).

the elite gradually expanded this distributive power into the power to organise all of society (Mann 1984, Boulding 1992a). The geographic centralisation of religious temples in the city, and their imposing and elevated form, was analogous with the centralisation and elevation of priestly power (Mumford 1961). With this religious centralisation came a centralisation of economic power (Sack 1986). It seems a reasonable proposition that the religious, capital and military elite conspired to maintain a social hierarchy with themselves at the top; Mumford describes this as "an alliance between the political, the economic and the religious agencies" (1961: 49). The urban hierarchy established what Bookchin calls "epistemologies of rule" which "foster the development of patriarchy and an egoistic morality in the rulers of society" (1982: 89). Boulding (1992a) notes that with the emergence of this hierarchy came the emergence of patriarchy.

The creation of a non-agrarian class was the beginning of a profound change in societal values. Boyden observes that "for the first time in human experience, a significant proportion of the population went through life without participating in the intimate interactions with the natural environment which are associated with the food quest" (Boyden 1987: 126). This was a substantial disjuncture in the human-nature relationship, allowing urban dwellers to see themselves as distinct from nature and obscuring the biological reality that humans depend on nature for survival. Hughes speculates that in early Mesopotamia the attitude towards nature "is marked by a strong feeling of battle" (1994: 34). This human-nature disjuncture went hand in hand with new forms of worship that, unable to revere the now-tamed nature, began to revere instead the collective power that enabled the sublimation of nature:

> Man [sic] was bound to be impressed by his collective power when it had won for him such sensational victories over Nature as the conversion of the once-savage jungle-swamps in the lower Tigris-Euphrates valley .... into docile canals, dykes and fields, and when the unprecedented productivity of these reclaimed wildernesses had raised the wealth and populousness of the local community from a Neolithic village to the level of a Sumerian city state (Toynbee 1966: 106).

The worship of collective human power slowly gave way to a conception of an ultimate being or beings - a 'god' or 'gods'. This ultimate spiritual reality was consistent with the worship of human power (Toynbee 1966). As the gods became humanised their priestly human envoys laid claim to power within society: "the priestly corporation had acquired the role of a cosmic brokerage firm between humanity and its increasingly anthropomorphic deities" (Bookchin 1982: 91).

Religion enabled an ethical code to be divined according to the ultimate spiritual presence rather than by the needs of society (Toynbee 1966: 73).[24]

The new religious consciousness supplanted the organic sensibility of hunter-gatherers and early farmers with a pervasive subject-object distinction. This enabled 'nature' to be seen as something 'other' than human. The 'othering' of nature later became analogous with the 'othering' of different, initially less 'civilised' groups of humans.[25] Nature became "despiritualized" and began to lose the prescriptive force it had in earlier organic societies (Leiss 1972: 181). Once nature was generalised and made distinct from humanity it became possible to see its exploitation as servicing rather than undermining human well-being. An early instrumental consciousness began to emerge. With time every animal came to be seen as serving some human purpose, as did every plant and mineral; exploitation, not stewardship became the dominant theme (Thomas 1983). Indeed, civilisation was "synonymous with the conquest of nature" (Thomas 1983: 25).

The growth of urban populations put pressure on the municipal authorities to ensure a regular supply of food. This lead to the ruling elite establishing granaries and food reserves - one of the earliest functions of government (Tuan 1979, Sack 1986). Control of the provision of basic needs slowly became more widespread societal control. As populations grew the urban society increasingly exerted influence on nearby, and ultimately far distant farming communities. With the centralisation of authority and the expanding reach of its administrative power came "a greater territorial definition of social relations" (Sack 1986: 70). The development of roads enabled more fluent transportation of produce to the city, and enabled the city to extend its administrative reach.

The rise of cities was both a product of, and a fulcrum for, the development of occupational specialism. Soldiers, merchants, metallurgists and scribes were among the first full time specialists (Mumford 1961, Toynbee 1966). The need to administer the food surplus, organise the military, assert the authority of religious

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[24] Higher forms of spirituality rested on a dualism between the 'darkness' and 'light', a metaphor that pervades contemporary culture and reflects (*white* skinned) Eurocentrism (Tuan 1979). Christian theology had a profound impact on Western conceptions of time, it saw history as a linear progression of ever higher forms of spiritual being and morality (Falk 1971, White 1997). The Christian way was premised on the earlier separation of people from nature: it is "the most anthropocentric religion the world has seen" (White 1997: 148).

[25] Humans considered themselves to be distinct from nature for at least three reasons: the capacity for speech; the ability to reason; and the free agency and moral responsibility that was integral to theological teachings (Thomas 1983).

leaders and maintain the hegemony of the elite created a bureaucratic class which was from the outset largely the domain of (some) men; females were increasingly left to attend to the household (Boulding 1992b).

Material wealth became a new social phenomenon and a determinant of social status. It was experienced differentially among members of the urban society, and between urban and agrarian societies. Consumption became an expression of self. For the urban poor, unable to feed themselves from the land - particularly as land holding monopolies emerged in Europe - subsistence demanded predation on other people. By the late Middle Ages in Europe the spread of poverty and alienation from the land was so pervasive that "violence and crime were endemic" (Tuan 1979: 132). With the rise of violence and robbery came enhanced governmental repression to maintain 'law and order'. However, for much of this period the wealthy capital classes were a law unto their own and this 'law' was as often criminal as it was 'order' (Tuan 1979). Material wealth and poverty interacted in ways that inevitably favoured the wealthy; Europe for the poor became "an extremely insecure social landscape" with "desperate indigence existing side by side with opulence and power" (Tuan 1979:134).

Differences in social status and power gave rise to an unprecedented stratification of society: "unlike in earlier times, new societal developments could be good for one group of people in a community, but bad for another group" (Boyden 1987: 128). Marked deteriorations and differences in the patterns of diet, health and disease began to emerge. For the urban poor water pollution, inadequate sewerage, garbage accumulation, flies, rodents, cockroaches and other pests all contributed to serious health problems: "people were at times living in almost constant terror of being struck by one or other of the severe infectious diseases" (Boyden 1987: 148). So, the differentiation between people was also in terms of basic survival needs.

The growing prevalence of consumption and ownership was paralleled by the emergence of a cash economy. Money served as the common determinant of value which allowed comparison and exchange of an increasingly diverse range of commodities. Money heralded the removal of exchange from the contextual limits and locales that characterised the previous system of barter (Giddens 1985b). Money refined the process of accumulating surplus by allowing for an assessment of profit (Giddens 1985b). With the widespread use of cash came the first financial

institutions. As a standard measure of commodity value, money had a profound influence on society - it became a standard measure of a *human being's* value.

In Europe in the baroque period the accumulation of surplus coupled with the use of cash as a means of exchange contributed to the emergence of a (mercantile) capitalist economy, defined as "a social and economic system in which individuals are free to own the means of production and maximise profits and in which resource allocation is determined by the price system" (Bannock et al 1992: 61).[26] In the principalities of 16th and 17th century Europe anything could be owned including land, animals and people. With the advent of intercontinental travel non-European people were transported to Europe and sold as the chattels of the ruling classes.[27] A wealthy land owner could 'own' hundreds of human beings and people could be "born a slave, completely subservient to the will of others" (Boyden 1987: 128).[28]

With the advent of civilisation the extended family began to disintegrate as kinship relations were supplanted by territorial and class based control (Bookchin 1982). There was most probably a strong sense of community in the earliest urban environments, however with time the degree of involvement, belonging and responsibility began to be experienced differentially between men and women. Women were slowly relegated to the 'underside' of public life: "the requirements of trade, territorial expansion, and warfare shift the focus away from the matrikin" (Boulding 1992a: 138). As participation in the urban economy became more valued, women became comparatively less valued by virtue of their exclusion.

Large urban centres contained previously unseen densities of people. Typical densities ranged from 50 to 300 people per hectare (Boyden 1987: 126).

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[26] With the growth of capitalist social relations household labour took on a new roles. The household became a unit of production as well as a site of subsistence and social activity. This additional labour requirement fell most heavily on women who were increasingly engaged in pottery, weaving, gardening, cooking, cheese and soap making, cleaning, beer brewing and healing, whilst continuing to raise children (Merchant 1982). Further, as patriarchal relations were consolidated in public life, these were gradually brought home to the domestic realm and undermined the security and authority of women: "both in home and economy, the social division of labour shed its traditional egalitarian features and acquired an increasingly hierarchical form" (Bookchin 1982: 63). In the countryside women were also increasingly burdened: "the story of the lot of rural women from the Middle Ages to the industrial revolution is one of increasing work loads and increasing severity of working conditions" (Boulding 1992b: 12).

[27] Although slavery was also a feature of Egyptian and Meso-American civilisations.

[28] An important aspect of slavery was the use of female slaves for the sexual gratification of men, which, Boulding observes, added "one more push to the set of forces that were combining to lower the status of women in the city" (1992a: 149).

Whereas in past societies there was only the in-group, and 'others' were distant, in urban societies the in-group was less readily identifiable, and 'others' were in the milieu. The basis of individual identity changed and conformed to the stratification of occupations and status. Thus class and identity became inseparable.

The use of boats for travel was developed in the early farming phase and was a skill which Polynesian societies had developed well before Europeans. However, when Europeans acquired the skill in the 15th century it "changed the oceans from barriers into canals", and enabled them to establish colonies in remoter parts of Africa, the Americas, Asia and Oceania (Crosby 1985: 557).[29] European culture was able to enforce itself upon the rest of the world through a combination of indigenous good-will (shortlived), superior military technology, and the spread (frequently deliberate) of foreign pathogens to which non-European people had little resistance.[30] Europeans imposed their ideas, technologies, infrastructures, diets and economies on the people and places they colonised. They saw the lands of the New World as empty space and uninhabited (Sack 1986). Although almost all the subjugated people of the New World were oppressed, Shiva (1989) and Boserup (1970) consider that women suffered more.

The European invasion was ecological as much as it was cultural. European farming practices were imposed in all newly settled areas. Non endemic species were introduced, creating a new wave of ecological niches and expulsions (Boyden 1987). Trade in resources from the new colonies included the trade of slaves in some cases. The extraction of raw materials and labour arguably secured the growth of wealth in Europe at the expense of the natural wealth and culture of other regions.

Throughout the early urban phase there was a growing appreciation that knowledge, when valued and fostered, becomes self propagating. This was reflected in the introduction of formal education and specialised training in disciplines such as medicine, metallurgy, alchemy and astrology. From the tenth century onwards universities were developed in the Middle East and China, and then in Europe from 1200 onwards. This knowledge explosion, however, formally excluded most women (Boulding 1992b). As the tangible manifestation of

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[29] The major oceanic powers were based in Portugal, Spain, Holland, Venice, Genoa, Britain and France (Mannion 1991).

[30] It is thought that at the time of European settlement the Aboriginal population of Australia was in the order of 750,000, but by 1920 the remaining population numbered 60-70,000 - a decimation (Boyden at al 1990).

knowledge, technology also began to proliferate. Tools and machines of the era included better wheeled vehicles, sailing ships, the potter's wheel, pulleys, treadles, the Archimedean screw, bottles and bellows, and water powered mills (Toynbee 1966). All of the early machines relied on non-polluting sources of energy (although landform and hydrological changes resulted from the diversion of water). Improved road design, the harnessing of the horse to wheeled vehicles, and the sailing ship, were all "modest steps towards the annihilation of distance" (Toynbee 1966: 77). Later in the urban phase extrasomatic energy began to be harnessed in the form of steam engines and gunpowder (Boyden 1987: 143). Other revolutionary technologies were the printing press, the compass, and aqueducts. An important technological innovation of the period was the mechanical clock in the early 14th century (White 1997).[31]

The chains of dependency between communities were strengthened and lengthened by trade in luxury items and new technologies which were indispensable to the functioning of the hierarchical urban political-economy. Trade is a necessity of urban life (Toynbee 1966). Trade entailed traversing distance between cities and population centres, which opened up the intervening spaces to exploitation and territorial competition (Bennett and Dahlberg 1990).

Another profound change of urbanisation was the institutionalisation of violence. Boulding considers that the peacefulness of earlier Neolithic and primeval society was unable to be sustained in the face of "an arms race heavily assisted by traders and metal smiths .. it was not destroyed; it simply armed itself and stopped" (Boulding 1992a: 145). Violence became corporatised, its means and motives - initially to secure food supply and defend the community - were controlled by the city-state (Falk 1971). Deliberately organised violence came to be regarded as a normal aspect of social life, both in the form of warfare between urban societies, and in the guise of legitimate control of social behaviour. Those

[31] The clock transfigured the conception of time to become linear, regular and forward looking rather than circular, seasonal and historically infused. The clock 'emptied' time and removed it from space. Time became measured not merely in units of time but in units of money. Labour could now be regulated to a new gauge of efficiency (Rifkin 1991). The ability to measure time more accurately was integral to the development of oceanic navigation. Indeed the 'map' (another urban development) went hand in hand with the measurement of time. With the map "there is no privileging of place (a universal projection), [it] is the correlate symbol to the clock in the 'emptying' of space" (Giddens 1991: 17). The clock and the map made traditional grounded conceptions of space and time more abstract, they eroded organic society and planted the seeds of modernity.

who partook in violence on behalf of the city-state were projected as heroes of society. Violence thus not only became normalised, it became desirable.

As technology developed, the geographic reach of warfare extended, and warfare itself became more destructive. But despite larger armies and more destructive weaponry, it was not until the development of gunpowder that the task of injuring others took on a remote and impersonal character. The development of gunpowder also substantially increased resource use, White writes that "when the first cannons were fired, in the early 14th century, they affected ecology by sending workers scrambling to the forests and mountains for more potash, sulfur, iron ore, and charcoal, with some resulting erosion and deforestation" (1997: 144).

When the city was able to firmly control the territory beyond its walls it became the city-state. A state is defined as "a political organisation whose rule is territorially ordered and which is able to mobilise the means of violence to sustain that rule" (Giddens 1985a: 20). In the Tigris-Euphrates valley, and in later European city-states, there was frequent conflict over competing claims to territory. The idea of 'security' became equated with territorial integrity, particularly in Europe. The waging of war was motivated more by expansionist desires than by defensive requirements. The threat/defence cycle that emerged was instigated by aggression. The ruling elite "found it expedient to conclude compacts with their populations offering protection in exchange for the revenues and manpower to fight wars" (Lipschutz 1992a: 408). The offer of protection and security made by the city to the populace was ironic, for protection and security themselves were not so necessary and had little meaning prior to the city-state. By the Middle Ages in Europe, warfare, poverty, famine, crime and internal repression all combined to render "people insecure to a degree that it is hard for us now to envisage" (Tuan 1979: 73).

The authority of the European city-states was undermined by the authority of religious leaders: "the church was strong enough to declare and enforce the Truce of God, spelling out where and when fighting could take place" (Boulding 1992b: 2). But in 1648 the city-states of Europe signed the Treaty of Westphalia, "a crucial demarcation between an era still dominated by competing claims to religious universalism and hierarchical authority and an era of secular competition and cooperation among increasingly autonomous political communities" (Walker 1995: 320). Westphalia was "a coup from below", in undermining the authority of

the church the city-states progressively gained authority within their own territory (Lipschutz 1992a: 400). With this came an unprecedented consolidation of political power underwritten by the "norms of anarchy, self-reliance, absolute sovereignty within the state, and no authority outside of it" (Lipschutz 1992a: 401).[32]

The city was engaged from the beginning with the codification of property rights and the establishment of a market system necessary for stable capitalism (Mann 1984, Sack 1986). It also provided guarantees which enabled the establishment of commercial banks. Capitalism was significantly strengthened by land tenure developments in England beginning in the 15th century which saw some common land transferred to private ownership. This 'enclosure of the commons' removed many small farmers and squatters from the land and forced them into urban areas. With the support of the state a new land owning and leasing elite emerged which increasingly accumulated common land under its exclusive control.[33] In removing more people from the land, enclosure consolidated two preconditions for capitalism: the populace became dependent on commerce and trade for subsistence such that the merchant became not a vendor of 'conveniences' but a vendor of basic needs; and people displaced from the land were forced to sell their 'labour' in exchange for the means to purchase their subsistence requirements (Sack 1986). This created a profound alienation as well as fundamental disempowerment of the individual:

> The fact that a worker has to sell his or her labour to an employer in order to gain a living is the main constraint through which the compliance of the labour force is achieved. It replaces .. the various admixtures of bondage and the threat of the use of violence.. (Giddens 1985a: 131).

The power of capital slowly transfigured Western Europe from a primarily feudal to a overwhelmingly capitalist society (Tuan 1979). With this came the doctrine of 'freedom of enterprise' which "was from the beginning not altogether a blessing. As the liberty to work or starve, it spelled toil, insecurity, and fear for the vast majority of the population" (Marcuse 1964: 2). With the spread of capitalism

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[32] A number of political theories were advanced in Europe after the 15th century which rationalised the power and practices of the city-state. Machiavelli's *The Prince* was written in 1513 and is hailed as a classic of Realpolitik (Garraty and Gay 1981). Hobbes' *Leviathan* of 1651 was also notable for its explication of a system of rule of law and obedience rooted in the authority of the state. These early political writings are, as we shall see in chapter 4, often misappropriated. Boulding (1992b) and Tickner (1992) claim that these early conceptions of the state were both ontologically and practically masculine.

[33] By the mid 17th century landlords controlled approximately 70% of the English countryside (Merchant 1982: 54).

came the need for more growth and accumulation, bigger markets, more products, and innovation (Sack 1986). Change was entrenched as an imperative of the new social system and became embodied in the idea of *progress*. This emphasis on growth and expansion massively accentuated environmental degradation in Europe in a way that could not be attributed to population pressure alone (Merchant 1982). Mineral extraction and metalworking underwrote this early capitalist economy; coal, copper, iron, tin, gold, silver and mercury were all extracted. Indeed, in England in the sixteenth century mining operations quadrupled (Merchant 1982).

In the Renaissance period in Europe (14th-15th centuries AD), a natural cosmology was developed which drew on the Greek conception of nature as orderly, but abandoned the idea of a natural mind or soul.[34] This abandonment arose in part because of the Christian theology that nature was God's, and therefore man's [sic] domain (Collingwood 1945). The Renaissance natural cosmology was motivated by anthropocentric, practical and utilitarian needs (Thomas 1983). Once European consciousness ceased to project itself into external nature "in search of security and validation of standards of conduct", nature became an object of conquest (Leiss 1972: 185). Renaissance thinkers like Copernicus, Descartes and Galileao variously developed a conception of nature as being observable, quantifiable and knowable with certainty (Collingwood 1945). The experience of the mechanical clock and increasing mechanisation of production saw the machine become a metaphor for external (and later even internal) nature.[35] This paved the way for a conception of external nature that was divorced from ethical considerations. Like the machine, nature and its constituent parts could be dissembled and dissected without due care for the act nor for the consequences.[36]

The Renaissance natural philosophy was reinforced by capitalist relations and was refined during the European Enlightenment (16th century AD). With the

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[34] For the Greeks the world of nature was alive and in ceaseless motion, but this was a motion that was orderly and teleological, nature was seen to have a mind and a soul of its own (Collingwood 1945).

[35] Animals, for example, came to be seen as "mere machines or automata ... capable of complex behaviour but wholly incapable of speech (and) reasoning" (Thomas 1983: 33). By contrast, Europeans were distinguished by the 'soul' and religious sensibility.

[36] The analogy was extended to apply to other humans, for example people of colour, women and the mentally infirm were at times viewed as 'animals', beastlike, soulless and bereft of sentience (Thomas 1983). Once inscribed as beasts, the oppression and denial of the rights of these 'others' became legitimated: "their dehumanization was a necessary precondition of their maltreatment (Thomas 1983: 45). Further, the Renaissance was a 'male' humanism and its discoveries were not accessible by women (Boulding 1992b).

Enlightenment nature came to be seen as "a world of dead matter, infinite in extent and permeated by movement throughout, but utterly devoid of ultimate qualitative differences and moved by uniform and purely quantitative forces" (Collingwood 1945: 112). This destroyed the pre-civilisation idea of the organic cosmos. With the Enlightenment came "a huge outbreak of dualisms: eg. (a) in metaphysics, between body and mind; (b) in cosmology, between nature and God; (c) in epistemology, between rationalism and empiricism" (Collingwood 1945: 100). The rise of dualisms reflected and accelerated the separation of people from nature, and people from people. As suggested in chapter 2, dualisms have continued to be a pervasive component of contemporary (Western) reason.

Summary

The city heralded a profound shift in the nature of intra-human and human - environment relations. Bookchin is cogent on the shifts that transpired:

> It was the city that provided the territory for territorialism ... the marketplace for elaborate forms of exchange, the exclusivity of quarters and neighbourhoods for classes, and monumental structures of the State. Its timbers, stones, bricks and mortar gave enduring tangibility to social, cultural, institutional, and even moral changes. ... the city crystallized the claims of society over biology, of craft over nature, of politics over community ... it fought back the ever-invasive claims of kinship, usufruct, and complementarity, affirming the sovereignty of interest and domination over sharing and equality (Bookchin 182: 97).

The concentration of power in the hands of an urban elite resulted in enhanced security for a small minority and a growing insecurity for the majority of people. The consolidation of power in hierarchical structures saw the advent of militaries and a war-culture which served to heighten insecurity among the masses and waste valuable material and human resources. New forms of structural violence and oppression were imposed on women, labourers, peasants, the urban poor and foreigners. Larger scale agriculture allowed for a food surplus most of the time, but in times of shortages an unprecedented number of people were subjected to hunger. Further, more widespread degradation of soils and water emerged as a new cause of insecurity. The pre-civilisation organic outlook was gradually displaced by an anthropocentric and later mechanistic conception of nature that created a pervasive schism between humans and the environment. With the emergence of the city the primary locus of insecurity shifted from the environs to humans, and people shifted from being the principal source of security to being the principal source of insecurity.

3.5. The Modern High-Energy Phase

The modern high-energy phase began in the latter half of the 18th century and has (by most accounts) not yet ended. The modern high-energy phase is also referred to more generally as 'modernity', defined as "the cultural experience associated with the break in the past signified by the onset of the Enlightenment", which is "inextricably mixed with the progress of reason as a mode of thinking about the world, and rationalization as a means of intervening in it" (Cooke 1989: 287). This modern era has six notable characteristics: industrialisation as the dominant mode of production, capitalism as the near-universal economic order, the intense use of extrasomatic energy, unprecedented rates of population growth, the nation-state as the dominant political institution, and the centralised control of the means of violence (Giddens 1985a, Boyden 1987). These characteristics were prefigured by important developments late in the early urban phase in Europe, notably: the development of scientific reason and experimentation in the Enlightenment, the rise of the sovereign city-state, and early forms of capitalism following the enclosure of the commons (see the previous section).[37]

The industrial revolution was enabled by the Enlightenment. It sought to satisfy all material wants through production in large scale factories utilising human labour in conjunction with machines powered by fossil fuels. Industrialisation quickly came to be the dominant mode of production in 19th century Europe and North America. Prior to the industrial revolution most goods were produced by craftspersons. The most distinguishing characteristic of industrialism is the entrepreneur's ownership of the means of production, sources of power, and raw materials (Giddens 1985a). It also involves increased control of labour both in terms of its procurement and its deployment into specialised divisions. With larger scale production, initially of metals and textiles, came large scale mining and milling activities, and an increase in non-food agricultural production. Industrialisation involved increased use of raw materials and energy, and equally high outputs of non-organic wastes.

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[37] It should be noted that only a quarter of the world's population live in truly 'modern' high-energy societies, however this discussion focuses on these societies as they have had far-reaching effects throughout the world.

The scientific revolution (a product of the Enlightenment) delivered advances in medical science, higher standards of hygiene, and public health facilities, all of which served to lower infant mortality rates and increase life expectancies in Northern (Anglo-) populations. As the modern high-energy phase progressed larger numbers of Europeans and North Americans entered the middle class, and with this came a decline in birth rates, albeit slowly. The time lag between lower birth rates and eventually lower death rates saw massive population growth, and population doubling times decreased substantially. This demographic transition ended only recently in today's industrialised states when births and deaths reached approximate equilibrium (Wrong 1977).[38] In industrialising societies, which constitute the vast majority of the world's people, a similar demographic transition has been, it is widely hoped, underway. However, until the majority of people in these societies have their basic needs sufficiently and securely satisfied, rapid population growth will continue. The world's population now stands at some 6 billion people, 1,200 times greater than it was at the time of the domestic transition. Most of this growth has occurred in the last 50 years.[39]

Population growth in the first industrialising societies was made possible by massive increases in agricultural production through the application of machines and artificial fertilisers. Whereas in the early urban phase some 90% of the population was engaged in food production, in today's industrialised societies only 5-15% of the population is similarly engaged. The application of fossil fuels has delivered massive gains in productivity per unit of *human* labour.[40] Since 1945 worldwide use of artificial nitrogenous, phosphate and potash fertilisers has increased more than tenfold (Boyden 1987: 182). The widespread use of artificial fertilisers, which are themselves energy intensive products, invests still more extrasomatic energy into food production.

There are energy inefficiencies in food consumption in modern societies. The typical person in a modern society consumes around 0.8 tonnes of cereal grain per year, yet only 10% of this is consumed directly, the remaining 90% being used

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[38] Birth and death rates are now in rough equilibrium in Europe, North America, Japan, Australia, and New Zealand.

[39] Throughout the modern era there has been a progressive shift from rural to urban living as people (labour) migrate towards industrial centres. In 1800 only 2.5% of the world's population lived in cities, by 1985 41% were living in cities. This rural-urban migration is another characteristic of industrialising societies (Ponting 1991: 300).

[40] For example, modern rice farming in the USA produces some 150 times more food energy per hour of human labour than subsistence rice farming in the tropics (Boyden 1987: 180).

to feed animals who provide meat, milk and eggs (Boyden et al 1990). Globally, 40% of the world's grain crop is used to feed and fatten livestock (McMichael 1993). One kilogram of American beef uses 5 kilograms of grain and the energy equivalent of 9 litres of gasoline (McMichael 1993: 95). These energy inefficiencies are matched by inefficiencies in the use of water in agriculture. The total water withdrawal by humans has increased from 100 cubic kilometres in 1680 to 3,600 cubic kilometres in 1990 (Kates at al 1990: 1).

Fossil fuels are thus as important a factor in feeding the world's people as water, sunlight and soil. The capacity of high energy agricultural practices to sustain current rates of output is diminishing as environmental degradation increases. The increased use of artificial fertilisers contributes substantially to long term problems of chemicalisation of waters and soils. This has been compounded by the widespread use of powerful pesticides after the second world war (Goudie 1986). Irrigation occurs at ever wider scales, and therefore so does soil salinisation and erosion. The problems of agricultural sustainability are compounded still further by the clearing of natural vegetation (more trees are cleared every year than are planted), which contributes to soil loss. The present rate of soil loss throughout the world outstrips the rate of replenishment.

Despite increases in food production, there is an unprecedented level of hunger and malnutrition throughout the world (chapter 1). This is due to a synergism of factors including: inappropriate application of agricultural practices; climatic variations; land degradation arising from overpopulation and unsustainable resource use; armed conflicts; massive disparities in wealth and access to productive land within and between societies; Western diets which consume more photosynthetic energy from higher in the food chain; exploitative relations between industrial and industrialising societies which distorts allocation of resources away from basic needs; and the globalisation of capitalism which demands that a society function according to the dictates of the broader global economy rather than its own values. Nevertheless, on a global level enough food is produced to satisfy the dietary requirements of all the world's people. The issue of malnutrition is very much an issue of maldistribution of foodstuffs, and this, as Boyden notes, "is not due to any innate lack of organising ability in the human species" (1987: 212). If a select group of humans could organise themselves sufficiently to threaten the world with nuclear annihilation, then it is hard to

believe that the best efforts of the industrialised world could not manage to supply food to all those in need.

Energy use is the single best indicator of the degree of industrialisation in a society. Total human energy consumption has risen from 36 Petajoules (PJ) per year at the end of the hunter-gatherer phase, to 5,900 PJ per year in 1650, to 380,000 PJ per year in 1990 (Dovers 1994: 14). All of humanity now uses 20,000 times more extrasomatic energy than hunter-gatherers did, and 1,000 times more somatic energy (Dovers 1994: 14). In some industrialised areas the per capita use of energy is in excess of 100 Human Energy Equivalents per day (Boyden et al 1990: 66). The global average extrasomatic energy consumption per person was 67 GJ/year in 1990, a twenty-fold increase since hunter-gatherer times (Dovers 1994: 14). The biggest increases in energy consumption have occurred since 1850. Regional discrepancies occur, in some parts of the world per capita extrasomatic energy use is 400GJ/year, whereas in other parts it remains at early farming levels (Dovers 1994: 15). This increase in energy use has come about primarily through burning fossil fuels which has resulted in pollution of the atmosphere, soils and water. Between 1860 and 1975, for example, there was a fifty fold increase in global CO2 emissions (Boyden 1987: 204). Global sulfur emissions were negligible at the turn of the 20th century but the human output of sulfur now stands at some 150 million tons per year (Kates at al 1990: 1).

The earliest fossil fuel energy technology was steam power. In the second half of the 19th century experiments with oil, gas and coal lead to the development of the internal combustion engine which has since been of profound importance (Boyden et al 1990). Late in the 18th century the technology for electricity was being pioneered and by 1800 batteries were being used as a source of electrical power.[41] However, the availability of electricity was not widespread until it was generated by burning coal, and until the development of the infrastructure necessary to transmit it. When this had been achieved in the twentieth century it facilitated far greater levels of automation in production, and generated a new wave of industries (Ponting 1991). Nuclear power was applied on a commercial scale after the second world war. It involves the generation of wastes that can alter genetic structures and remain harmful for hundreds of thousands of years. More recently, new energy technologies which utilise solar, wind and geothermal power have been developed; these are by and large pollution-free energy technologies.

[41] Electricity was first generated in London in 1834 (Ponting 1991).

The amount of resources consumed by humans has also massively increased in the modern high-energy phase. Annual production of automobiles, for example, has increased from 8 million in 1950 to 35 million in 1994 (Brown et al 1996). More primary metals have been consumed during the past 25 years than during the whole of previous history (Boyden 1992: 159). The large scale depletion of the world's wood and forested resources in the modern age has been driven by demand for non-edible cash crops such as wood, tobacco and cotton, and by demand for minerals and agricultural produce (Tucker and Richards 1985).[42] Of all the deforestation caused by humans, three quarters of it has occurred since 1860 (Kates et al 1990). The growth in consumption of energy and resources is matched by a growth in the output of biologically harmful wastes. It is estimated that 30,000 different chemicals are produced each year in quantities greater than 1 tonne, and that 1,500 of these are produced in quantities greater than 50,000 tonnes (Boyden and Dovers 1992: 66). The average person in a modern high-energy society annually discharges 20-30 tonnes of carbon dioxide into the atmosphere (Boyden at al 1990: 66).

Prior to industrialisation human metabolism remained more or less constant (Boyden 1987). It is estimated that humans now harvest at least 7% of all energy trapped by photosynthesis over the earth's surface. However, only 1% of this biomass energy is actually consumed as food (Boyden 1987: 181). One single species - the human species - is therefore consuming a significant proportion of the total metabolism of the biosphere. McMichael estimates that "our aggregate impact upon the biosphere is ... about one million times greater than in .. pre-agrarian days" (1993: 2).

Individuals in both industrialised and industrialising regions must now contend with the health impacts of 'subliminal toxicity' (the slow ingestion of harmful substances through food, water and air), including lethargy, fatigue, irritability, cardio-respiratory disorders and cancer (Boyden 1987: 267). Dietary patterns have changed substantially in modern societies, whereas the average hunter-gatherer diet was 30% protein, 15% fat, 1-3 grams of salt and 5% sugars a day, the average person in a modern society consumes 15% protein, 40% fat, 10 grams of salt and 20% sugars a day (McMichael 1993).

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[42] For example, the consumption of paper in Australia has risen from 60kg per person per year in the 1950's to 140kg/person/year in 1992, placing added demand on domestic and foreign timber resources (Boyden and Dovers 1992: 65).

The concept of 'technoaddiction' helps understand the perpetuation of environmentally degrading practices in modern societies. Boyden defines technoaddiction as "the tendency of human populations to become dependent for health and survival on technological devices which were not necessary for health and survival when they were first introduced" (1992: 257). Consider, for example, a world suddenly devoid of electricity, or motorised transport, or telecommunications, or computers (Boyden 1987: 225). Advances in technology underlie humans' capacity to influence nature, but the technology-environment problem arises not from technology, nor from science or knowledge *per se*, but from its manipulation by capitalism to produce extraneous consumer items rather than changes for the genuine betterment of all people.

One of the key features of modernity is the nation-state. Although the precursor for the nation-state was the European city-state that emerged late in the urban phase, it was the French revolution of 1789 that marked the beginning of the 'nation' proper (Hobsbawm 1992). The 'nation' is understood here as "any sufficiently large body of people whose members regard themselves as members of a 'nation'" (Hobsbawm 1992: 8). This points to the extent to which the nation is a constructed entity. There are, however, three loose criterion which underpin the development of the 'nation': the historic association with a current or past state (such as the European city-states of the urban phase); the existence of a cultural elite with the capacity to foster nationalist sentiments; and a proven capacity for conquest, as "there is nothing like being an imperial people to make a population conscious of its collective existence as such" (Hobsbawm 1992: 39). Given these criteria, it is not surprising that modern nation-state emerged in Europe.[43]

Sovereignty (the supreme and unrestricted autonomy of the state) was institutionalised after the first world war with the creation of the League of Nations. This created a "deep commitment to the sovereignty of nation-state as the 'natural' political condition of humankind" (Giddens 1985a: 259). Giddens writes of the emergence of international relations at this time:

> The development of the sovereignty of the modern state from its beginnings depends upon a reflexively monitored set of relations between states.... 'International relations' are not connections set up between pre-established states, which could maintain their sovereign power without them: they are the basis upon which the nation-state exists at all. The period of the burgeoning of international organizations, including the League of Nations and the UN, is not one of the growing transcendence of the nation state. It is

[43] See appendix II for a further discussion of nations and nationalism.

> one in which the universal scope of the nation-state was established (Giddens 1985a: 263-4).

The modern nation-state generates an internal unity that corresponds to definite borders (Giddens 1985a). It is unique for its ability to impose firm and distinct boundaries on otherwise porous geographical edges. States are a series of cartographically delineated insides and outsides which dominate contemporary political space (Harvey 1985, Cooke 1989). They are also integral in maintaining the boundaries and institutions necessary for modern capitalism to operate successfully. In this sense, the state secures the conditions for capitalism (Giddens 1985a, Harvey 1985, Cooke 1989). The modern nation-state has also successfully laid claim to the legitimate use and monopoly of the means of violence (Giddens 1985a). The nation-state differs in size, scale and nature from the forms of community that existed elsewhere in human history.

Capitalism preceded the industrial revolution. Indeed, if capitalism is "defined in terms of the rational organization of economic activity" to generate profit, then industrialisation - involving the use of extrasomatic energy, mechanisation, routinisation and unification of production processes - was perhaps an inevitable outcome (Giddens 1985a: 141). Capitalism necessitates expansion, it is a permanent and continuous revolutionising force (Hobsbawm 1994). Between 1850 and 1960 global output grew from a value of $611 billion to $ 6,936 billion, and the goods and services produced in the industrial regions (mostly Europe and North America) grew from $212 billion to $6,103 billion (all in 1993 US dollars) (UNDP 1996: 12). This growth occurred mostly in the already wealthy regions. In the non-industrial world growth was slower, from $399 billion in output 1860 to $833 billion in 1960 (1993 $US), during which time their share of world output dropped from 65% to 12% (UNDP 1996: 12). The UNDP describes the global economy at present:

> During 1965-1990 world merchandise trade tripled, and global trade in services increased more than fourteenfold .... More than a trillion dollars roam the world every 24 hours, restlessly seeking the highest return. This flow of capital is not just offering unprecedented opportunities for profit (and loss). It has opened the world to the operation of global financial markets that leaves even the strongest countries with limited autonomy over interest rates, exchange rates, or other financial policies (UNDP 1996: 8).

The flow of material and resources between the industrialised and the industrialising world has not lessened, but the terms of trade and the value of trade to the industrialising world has deteriorated. The transfer of wealth from

industrialising to industrialised nations occurs not only through undervalued resources, but also through finance and debt repayments: "traditional imperialism has been replaced by economic colonialism" (McMichael 1993: 25). The industrialising world pays some four times more in interest on loans than it receives in aid transfers (George 1988, Miller 1994). The International Monetary Fund and the World Bank have been central to this proxy colonisation and have affected a situation where "the policies of a great many countries are, in effect, now being controlled by financial interests" (Rees and Rodley 1993: 225). The connection between this impoverishment of the industrialised world and environmental insecurity was succinctly put by the Prime Minister of Zimbabwe in 1987:

> Those who are poor and hungry will often destroy their immediate environment in order to survive .. They [the industrialising countries] are faced with falling commodity prices, a rise in protectionism, a crushing debt burden and dwindling or even reverse financial flows. If their commodities bring little money, they must produce more of them to bring in the same amount or at times even less. To do this, they cut down trees, bring under cultivation marginal land, overgraze their pastures and in the process make a desert out of previously productive land. But in these actions the poor have no choice. They cannot exercise the option to die today so as to live tomorrow (cited in McMichael 1993:125).

Industrial-capitalism went hand in hand with increased demand for luxury items. From the 19th century onwards the consumptive ethic came to dominate the value system of Western societies. The personal desire to have more, and to have more choice, was conducive to the assumption that growth based on increased production and the greater accumulation of capital was inherently Good. For the wealthy, growth meant the chance to have more, and for the underprivileged, growth offered hope for improvement (Boyden 1987). But the tension of economic growth is that growth for growth's sake is not socially rational, it should be seen as a means to the end of enhancing the provision of basic needs (after UNDP 1996).[44] The scarcity that growth eliminates has always been primarily a scarcity of luxury items rather than a scarcity of basic needs. For most people the 'reality' of growth is "a form of enslavement" (UNDP 1996: 43). Like growth, the notion of 'progress' became entrenched as a Good after the 17th century. 'Progress' became the discursive symbol of the application of science and reason for the betterment

[44] Doubts about the desirability of growth have been expressed by, among others, Thomas Carlyle (1795-1881) (1971), Leo Tolstoy (1828-1910) (1987), John Stuart Mill (1806 - 1873) (1992) and Mahatma Gandhi (1869 - 1948) (1946). Gandhi argued that the earth was capable of providing for 'every man's need but not every man's greed' (UNDP 1996: 45).

of people. Belief in progress is the belief in a continuous change to the new, the better and the previously unavailable (Sack 1986).

With industrial-capitalism came the ideology of the free market. This *laissez faire* ideology holds that the maximum public Good would be achieved by the unregulated efforts of private, autonomous, rational and self seeking individuals in an unregulated market place (Mumford 1961).[45] This ideology erodes cognition of the fundamental purpose of government - to look after the well-being of the people - and supplants instead an economic rationality that limits state action (Cardoso 1996). Capitalism is unique for the "sweeping power" it gives to economics and the way in which it isolates the 'economic' from the 'political' (Bookchin 1982: 134, Giddens 1985a).[46] Leiss writes that this "legend of the equality of rights and individual freedom .. together with the illusion of popular choice under the conditions of mass democracy, still veils the reality in which the decisions of the few govern the lives of the many" (Leiss 1972: 168-9). This dominance of the (economically rational) means over the consideration of the (political) ends is a fundamental feature of modernity. The emptying of political discourse of substantive issues of the Good, supplanted by instrumental considerations of economic means, has undermined the basic precondition necessary for society to peacefully resolve its social and ecological problems. This will be revisited in chapter 11.

Modernity has severely degraded the supportive social fabric that had managed to survive in a diluted form up until late in the urban phase. In the past, very few people had no means of subsistence, and these were often looked after by the local community and the church. However, industrial-capitalism ushered in the new phenomenon of 'unemployment' at the same time as urbanisation eroded the strength of community and the bureaucratic state undermined the authority and power of the church. So, whereas in earlier times almost everybody was a part of

[45] Laissez faire ideology is commonly associated with Adam Smith (1723 - 1790).

[46] This division between economics and politics is a characteristic of neo-liberalism in the 1980's and 1990's (Rees 1995). This separation of the 'political' - understood in chapter 2 as the determination of desired social goals - from the 'economic', understood here as the efficient pursuance of profit, is integral to the instrumental rationalisation deplored by Adorno and Horkheimer (1979 - see appendix I).

society, in the impersonal, highly structured industrial era, the individual could become a 'victim of society'.[47]

Modern social life is characterised by radical reorganisation of time and space such that social relations are lifted from the context of specific locales and restructured across indefinite spans of time and space, Giddens calls this the process of disembedding (1990). With the rise of urban living an individual's relationship to 'community', and 'sense of place', have also been weakened.[48] Personal meaningless ("the feeling that life has nothing worthwhile to offer") is now a fundamental psychic problem of late modernity (Giddens 1991: 9), as is anomie ("the general dissatisfaction of individuals with modernity's major cultural values such that they no longer fully respond to them") (Giddens 1985a: 323). Explanations for the anomie and alienation experienced in modern times are numerous. The use of machines in conjunction with manual labour, the use of computers in white-collar professions, and the managerialism ("the bulldozer of market intent") associated with neo-liberal economics are all contributing factors (Rees and Rodley 1995: 233).[49] Giddens understands all these effects of modernity as undermining the ontological security of the individual (1991). These changes "have interfered with some of the important psychosocial health needs of human beings" and may contribute to knowingly harmful practices such as smoking, alcohol and other substance abuses. (Boyden 1987: 291).

Therefore the richness, diversity, creativity and traditions that characterise primeval, agrarian, and to some early urban life, and which are "optimum life condition conducive to health in Homo sapiens", have been displaced in the modern age (Boyden 1987: 79).[50] As well as contributing to behavioural problems, the intangible effects of modernity foster consumer behaviour as a substitute for

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[47] Women were particularly oppressed, their domestic work, as well as children's household labour, was frequently appropriated by males in "oppressive monogamous family structures" (Boulding 1992b: 187).

[48] Bookchin considers the market to have colonised every aspect of social and personal life and the buyer-seller relationship to be the substitute for all human relationships: "it calcifies and dehumanizes the most intimate relationships between people" (Bookchin 1982: 137).

[49] Bureaucracy is also responsible. It has replaced the traditional social order that held the individual and society together (Bookchin 1982).

[50] Technological advances and the reshaping of society into a regulated productive and consumptive system have driven these changes. In Marcuse's terms, "technological rationality reveals its political character as it becomes the greater vehicle of better domination", which is to say that the technical interest in the domination of nature integrally involves the domination other human beings (Marcuse 1964: 18, Leiss 1972, Adorno and Horkheimer 1979).

genuine psychosocial fulfilment: "consumer behaviour in modern western society compensates in a most important way for the decline of various intangible meliors - meliors associated, for example, with creative behaviour, a sense of responsibility, and a sense of personal involvement" (Boyden 1987: 301). The market is involved in "the whole scheme of substituting vicarious satisfactions for direct ones, and money and goods for life experiences" (Mumford 1961: 499). So, given the limitations industrial capitalist society places on avenues for personal fulfilment, consumption becomes a prosthesis for genuine satisfaction. Consumer behaviour reproduces itself by consolidating industrial-capitalism, and in so doing consolidates the generation of individual anomie and alienation. Further, as has already been noted, consumption is a key component in the intensification of environmental degradation.

The inequalities that exist between and within societies give rise to feelings of deprivation. The saturation and spread of telecommunications considerably exacerbates these feelings of deprivation. The media, conforming to capitalist imperatives, promotes consumption of the latest goods and services. Every person within earshot of a radio or television is made aware of where they stand in the have/have not hierarchy. This relative deprivation leads to continual increases in consumption of goods and services and thus continual increases in the use of resources and the generation of wastes (see chapter 11).

Throughout the modern high-energy phase the destructive power of weapons has increased. In the 19th century muskets and 12 pound guns were state of the art weapons. Today there are supersonic jets, submarines and long range nuclear missiles (Smil 1994). Developments in weaponry reached their nadir with nuclear weapons. Humans now have the means to destroy themselves (and much else besides) in a single fleeting moment. Technology has also depersonalised warfare. The more weapons become long range, the more killing becomes scientific rather than intimate: "the new modes of aggression destroy without getting one's hands dirty, one's body soiled, one's mind incriminated. The killer remains clean, physically as well as mentally" (Marcuse 1964: 265). Military advantage now increasingly equates with technological advantage: "knowledge, in short, is now the central resource of destructivity" (Toffler and Toffler 1993: 83). An estimate of the proportion of global scientific research devoted to military purposes is problematic, but Egea thinks that "military R&D is by far the single most important item in the world's budget for scientific and technological

research" (Egea 1994: 133). The relative priority given to military spending in the interests of 'security' as opposed to aid was indicated in chapter 1.

Throughout the twentieth century an international consciousness has emerged, largely in response to the 'world risks' of environmental degradation and nuclear warfare (Beck 1996).[51] Beck (1996) argues that modernity is being transformed into *risk society*: "a world where the basis of established risk-logic has been whittled away, and where hard-to-manage dangers prevail instead of quantifiable risks" (Beck 1996: 15). Giddens generally concurs, saying that the modern world introduces new risks which previous generations have not had to face, adding that; "now that nature, as phenomenon external to social life, has in some sense come to an 'end' - as a result of its domination by human beings - the risks of ecological catastrophe form an inevitable part of our horizon of day-to-day life" (1991: 4).[52] In response to these concerns the number of international intergovernmental organisations grew from 123 in 1951 to 365 in 1984 (Hobsbawm 1992: 181). There are now in excess of 30,000 nongovernmental organisations, and more than 1,400 were officially involved at the Earth Summit (Renner 1997: 152, UNCED 1993).

In recent times there has been a concentration of political and social power into the hands of private corporations. Whereas early in the industrial-capitalist phase the state and the corporation were engaged in a synergistic self promoting relationship, in the modern age the promotive behaviour, employment practices, and capital utilisation of the modern transnational corporation increasingly undermines the autonomous control and authority of the state. McMichael (1993) estimates that the world's largest 500 transnational corporations account for one third of global production. The multinational corporation has a capacity to move capital and technology rapidly to gain access the cheapest raw materials and labour, and to access the most favourable markets. Harvey calls this "capacity to command space and use geographic differentials" (1985: 142). The modern

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[51] Although global, what makes this risks important is their effects on *people*.

[52] Beck and Giddens speak more to the sociological *phenomenon* of risk rather than of the risks themselves. For Falk, the 'planetary crisis' is the product of the interrelated factors of population pressure, pollution, resource depletion and the danger of wars of mass destruction; these combine with modern technology to make accidents greater in scale in scope (Falk 1971). Harvey suggests that the crises that are inherent in capitalism, such as stock market crashes, certain forms of scarcity, and recessions, are all more universally experienced than in the past (Harvey 1985). Habermas considers that, as well as the dangers of nuclear war and disturbance of the ecological balance, "the violation of the personality system (anomie)" is also a crisis of global proportions (1989: 271).

corporation is the principal agent of production of goods, services and wastes, and so is central to the generation of environmental degradation and environmental insecurity.

Summary

With modernity has come an increase in the "complexity, magnitude and frequency" of human impacts on the biosphere (Goudie 1986: 24). Fossil fuel use, resource use, the production of wastes, and population have all grown exponentially. The systemic causes of environmental insecurity today are two; excess consumption and waste generation in the industrialised world, and poverty and debt in the industrialising world (which creates population growth and unsustainable resource use). These two phenomenon are totally interconnected to the synergistic features of the modern high-energy phase which themselves create insecurity, namely: industrialisation and capitalism; the massive use of fossil fuels; centralised control of intensifying means of violence; the nation-state system; and the alienation and ontological insecurity of the individual. In the modern high-energy phase insecurity includes the risk that human induced environmental degradation will (and does) undermine the stable provision of basic needs with detrimental consequences for health and well-being. There are also risks to well-being and welfare associated with more powerful forms of direct and structural violence. Mische summarises the shift in environmental insecurity that has occurred since modernity: "once more the threats have to do with nature, but this time not what nature can do to humans, but rather how human activities may be damaging nature, and in turn, the way this damage may diminish the prospects for future human survival, security, and peace" (Mische 1992: 107).

3.6 Conclusions

This chapter has sought to trace some of the major processes which have given rise to environmental insecurity. The discussion has been wide ranging as the problems of environmental degradation and environmental insecurity are products of a large number of historical processes which are interrelated in complex ways.

For 99% of the history of *Homo erectus* we lived as nomadic hunter-gatherers. The hunter-gatherer way of life was secure in that there was no structural violence, there were few material and social disparities within or

between groups, social life was collectively and cooperatively organised, and there were few episodes of direct violence. The primeval individual would have had a strong sense of purpose and place within the social group. Fellow hominids, then, were not a principal source of insecurity. The prime locus of insecurity was nature itself as humans lived according to the constraints of their immediate environs. Their impacts on nature were primarily localised depletions of plants and animals, and the clearing of vegetation through the use of fire. There was no significant threat posed by humans to the functional integrity of ecosystems.

The shift to cultivation around 10,000 years ago provided security in the sense of a regulated source of nutrition. However, when crops failed, few alternative sources of food were available. So although the domestic transition in some ways transcended nature's immediate constraints, the prime locus of insecurity was still nature. Agricultural practices in this period resulted in degradation of the immediate environs, but large scale ecosystem changes were few. More predictable and efficient production of food allowed for increases in population size. Society continued to be peaceable, the family remained as the basic social institution, and communal life was organised cooperatively. This organisation was direct and observable, and, at least in the early stages, there were few discrepancies in material wealth within or between communities.

The emergence of the first cities around 5,000 years ago saw an increase in the scale of social organisation necessary to produce sufficient food and to control food surpluses. Control of the supply of basic needs became control of society. Although the city provided some small security against nature, a new class of threats emerged as poor diets and social diseases became prevalent. Significant disparities in wealth began to appear and society began to stratify along lines of occupation, wealth, and power. Another insecurity arose with the development of armies and warfare. A religious reorientation began in the city which saw a convergence of religious power with political and economic power. As the scale of agriculture necessary to feed the urban population increased, so too did its ecological impacts. Soil loss, salinisation and acidification became more likely, more severe, and more widespread. By the end of the early urban phase the world's population was in the order of 500 million, a hundred times greater than the hunter-gatherer era. The early urban phase gave rise to the (European) Enlightenment which began to systematically investigate and manipulate nature for the purposes of human emancipation, and it saw the progressive enclosure of

the commons from the 15th century onwards. Another significant development was the imposition of European culture and agriculture onto other peoples in other parts of the world. So, in the early urban phase risks from external nature were lessened as humans learned to provide basic needs more reliably. However, with the organisational skills that gave rise to this liberation from nature came the power to deprive and exploit people for personal gain. The locus of insecurity shifted from external nature to human nature; people became a source of threat and uncertainty.

The modern high-energy phase began with the industrial revolution some 200 years ago. We can trace the rise of almost all contemporary environmental problems to the development and widespread application of fossil fuels, excessive personal consumption, and population growth. The world now has a thousand times more people than it did 10,000 years ago. New production techniques and an ever expanding range of consumable luxury items translated into ever increasing extraction of resources and growing pollution of the planetary sinks. Modern society conforms to industrial capitalist dictates of time and space, and social relations are subservient to productive relations. Where people were once sure of their places and beliefs, the traditional bases for certainty have now been undermined. The industrial revolution sought to supply everyone with basic needs with a minimum of human labour, but has been problematised by failures in distributive justice, the intensification of warfare, the undercutting of essential life support systems, and the erosion of political dialogue to foster consensus.

The potted and imperfect history delivered in this chapter suggests that 'security' is, if nothing else, a relative phenomena. Bookchin observes that "the stream of human progress has been a divided one: the development toward material security and social complexity has generated contrapuntal forces that yield material insecurity and social conflict" (Bookchin 1982: 64). Whereas for most of human history the environment was the omnipotent threat and determinant of welfare, and humanity was the common source of security, the biosphere is now subservient to a humanity that threatens itself in direct, structural, and psychic ways. Risks have become larger in scale. Today, environmental insecurity is about the welfare of individuals and the survival of whole societies at risk from large scale human induced degradation of the biosphere, and the radical uncertainties and instabilities this creates. Humans have thus moved from being at the whim of the environment to being its persecutor - and yet dialectically still its victim.

Integral to this increasing scale of environmental insecurity are increases in the destructive power of modern warfare, hunger, poverty and exploitation, and a loss of power and certainty for the individual. McMichael provides an excellent summary of these interrelated causes of environmental degradation and subsequent environmental insecurity:

> The *one* underlying problem is the entrenched inequality between rich and poor countries, which predominantly reflects recent imperial history, power relationships and the global dominance of Western industrial technology and economic values. Second, the *two* central manifestations of this inequality are: 1) rapid, poverty-related, population growth and land degradation in poor countries, and 2) excessive consumption of energy and materials, with high production of wastes, in rich countries. Third, the *three* possible (perhaps coexistent) adverse outcomes of those manifestations are: 1) exhausting various non-renewable materials, 2) toxic contamination of localised environments, and 3) impairment of the stability and productivity of the biosphere's natural systems (McMichael 1993: 7).

This chapter has sought to crudely historicise the development of environmental and related insecurities. The following chapter seeks to discuss more fully contemporary understandings of 'security'.

Part II

A Critical Examination of Environmental Security

Introduction to Part II

A Critical Examination of Environmental Security

Part I of this thesis has established the foundations upon which the following critical examination of existing approaches to environmental security is based. It outlined the critical green perspective which will now be applied, it defined key terms, and it established many of the key processes which, over time, have generated environmental degradation and environmental insecurity. Having established these foundations, the critical examination of environmental security which now follows can proceed in an informed, consistent, and accessible manner.

The aim of Part II is to provide a thorough examination of the literature which links environmental issues with the concept of security. Ambiguity and diversity are characteristics of this literature. It would be wrong to describe environmental security as a discourse or even a paradigm, although particular discourses are evident. Rather, there is a collage of overlapping and disparate theories, discourses and debates. Part II aims to make sense of this literature and to make an appraisal of it terms of the this thesis' critical green perspective (chapter 2), and in the light of the historical overview made in chapter 3.[1] On the basis of the limitations identified in Part II, Part III advances a human-centred environmental security concept, and discusses the implications of this for politics, policy, and governance.

The environmental security literature is ambiguous and contested for reasons which will shortly be discussed. There is thus a need for an heuristic guide to assist in comprehending the literature and structuring discussion (after page 96). It should be noted quite clearly that Part II addresses all the literature which links environmental issues to security issues, in whatever manner. It was from this (not much) broader context that the specific label 'environmental security' was born. It

[1] The ideas for Part II have been developed over a number of papers, including seminars delivered at Canterbury University (1998), Keele University (1997) and Lancaster University (1997), as well as conference papers given at the 1996 general conference of the International Peace Research Association (University of Queensland), the 1997 annual British International Studies Association Conference 1997 (University of Leeds), and the 1997 Institute of Australian Geographers/New Zealand Geographical Society annual conference (University of Tasmania). Two seminars were given over the course of this thesis at the Centre for Resource and Environmental Studies, Australian National University (1996 and 1997).

is extremely difficult, and ultimately pointless, to make the distinction between works which use the specific label 'environmental security' or 'ecological security', and those which discuss environment-security linkages in a more general way.[2] Perhaps the only thing that can be said with confidence is that 'environmental security' as a phrase *per se* arose in the mid-1980s (see chapter 5).

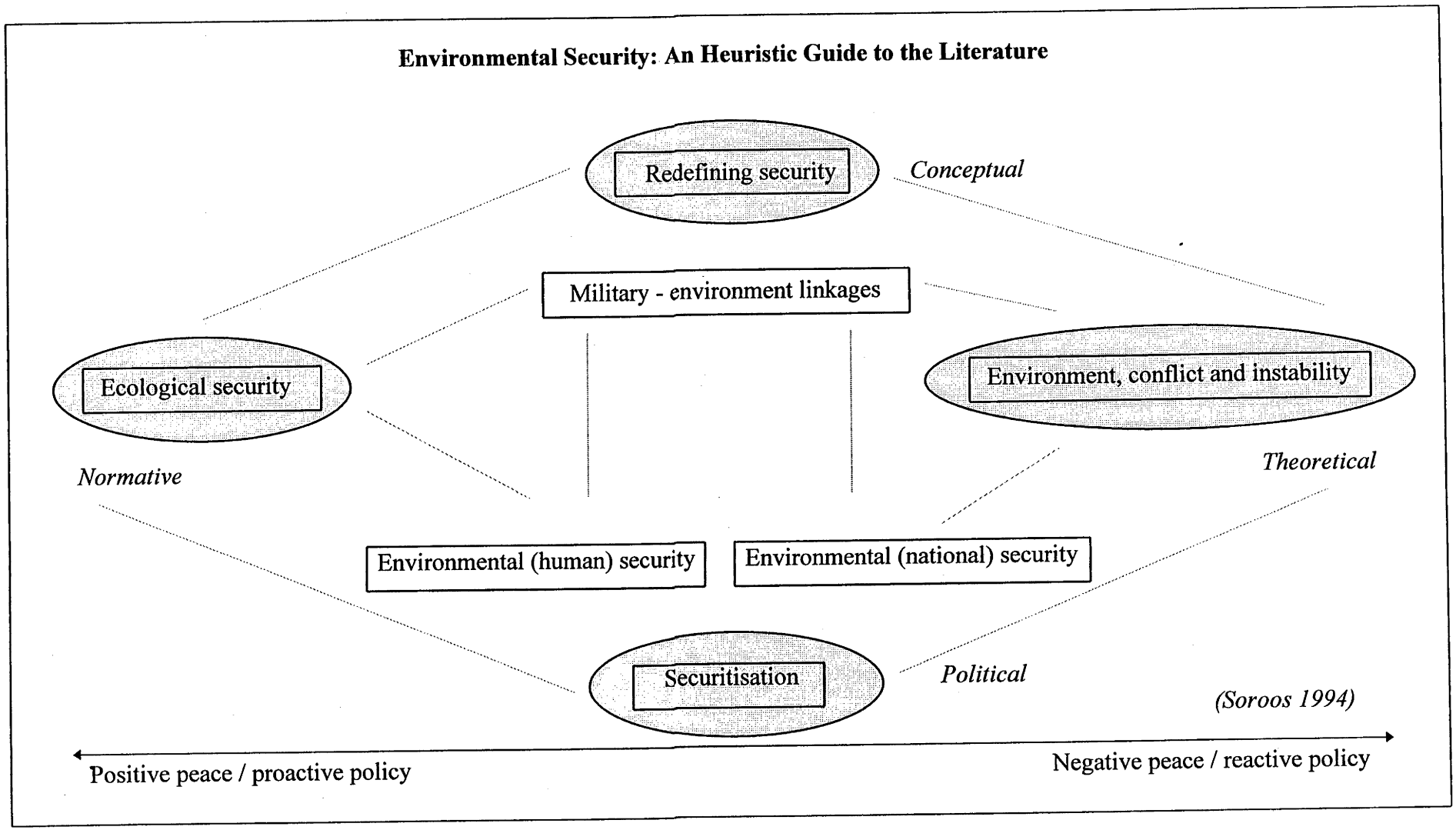
Ambiguities

The absence of an unambiguous and generally agreed upon account of environmental security can in part be explained by the conflation of the two terms - environment and security - which are themselves not unproblematic. The difficulties of talking about security will be considered in the following chapter. Some of the difficulties with 'environment' were discussed in chapter 1, where it was noted that 'environment' denotes all the external conditions of an organism, and so denotes literally everything there is. This thesis' understanding of 'environment' and environmental insecurity was established in chapter 1. It remains important to remember Harvey's observation that the word 'environment' is instructive for the way it is deployed to serve particular interests (Harvey 1996).

A particular difficulty that pervades the environmental security literature is an absence of agreement on *the problem* that is being addressed (hence the definition of environmental security in chapter 1). In some respects 'environmental security' is the answer to a question that was seemingly never asked (Brock 1996). The problem can be understood in a number of possible ways: in terms of the threats to *national* security that might arise from environmental degradation (variously considered in chapters 5, 6 and 7); as the human impacts on the security of the environment itself (chapter 9); or the way in which environmental degradation threatens the health and well-being of *people* (much like the environmental insecurity problem established in chapter 1, see Part III).

One certain theme of the environmental security literature is that environmental problems are 'new'. However, as chapter 3 has established, not all environmental problems are new, but what is new is the global extent of some environmental problems. With respect to this newness the theoretical legacy left to us by classic social and political theory is (perhaps) not immediately relevant

[2] No other commentaries make much of the difference.


Environmental Security: An Heuristic Guide to the Literature
Redefining security
Conceptual
Military - environment linkages
Ecological security
Environment, conflict and instability
Normative
Theoretical
Environmental (human) security
Environmental (national) security
Securitisation
Political
(Soroos 1994)
Positive peace / proactive policy
Negative peace / reactive policy

(Goldblatt 1996).[3] There is, in general, a notable lack of political and social theory in the environmental security literature.

With the meeting of words 'environment' and 'security' comes a convergence of divergent epistemological and ontological predispositions, all speaking of the common concept - environmental security - in implicitly and explicitly different ways. This array of philosophical viewpoints is a key contributor to the ambiguity of the concept. It is also a root source of debates which, whilst being ostensibly about epistemology and political strategy, are as much about different philosophical predispositions. In this respect, environmental security is not dissimilar to any other contested notion (including that of sustainable development) in that the level of debate is far deeper than is immediately apparent.

All this convergence points to the great difficulty, if not impossibility, of arriving at an agreed concept of environmental security. The debates over the meaning of environmental security can be seen to be indicative of a healthy and seemingly honest and meaningful exchange of ideas. From the broader perspective, this should hedge against paradigmatic entrenchment and discursive dominance, and will hopefully advance communication about strategies to address environmental insecurity. One hopes this will lead to a broad region of agreement which will maintain healthy introspection, but be able to advance a set of recommendations for meaningful positive action. This optimism aside, much needs to be clarified, and many spurious notions and conceptions of environmental security dismissed. This corrective function is an implicit aim of this thesis. In order to make sense of the literature, and to structure discussion, a heuristic guide to the literature has been developed (previous page), this will now be discussed.

An Heuristic Guide to the Literature

The heuristic guide to the literature presented on the previous page helps to facilitate coherent discussion of the environmental security literature. This should be seen as a loose device to aid comprehension, and should not be seen as an overly literal or accurate classification. In conjunction with the previous discussion of ambiguities, it serves as a cursory introduction to some key

[3] However, more work could be done to apply the relevance of socialist and utopian visions to contemporary environmental problems. This is a long term project for environmental politics and sociology.

dimensions of the environmental security literature which are explored in greater depth throughout the remainder of this thesis.

It is possible to identify seven broad categories of the environmental security literature. First, there are the various efforts at redefining security which will be discussed in chapter 5. These efforts seek to contest and reinterpret the dominant political Realist approach to security (outlined in chapter 4); they are the beginnings of the concept of environmental security, and they very much frame the subsequent literature. Soroos (1994) calls this category the *conceptual rationale* for environmental security. Flowing from these efforts has come investigation of the linkages between environmental degradation and conflict (chapter 6). Soroos (1994) calls this the *theoretical* dimension, arguing that it focuses on cause - effects relationships. This second category is closely related to the third, which considers the environment in terms of national security (chapter 7). The fourth category arises from exploration of the links between the traditional agent of security - the military, and the environment (chapter 8). A fifth category is the literature which adopts the deepest green perspective by considering the biosphere as the penultimate referent of security (chapter 9). Soroos calls this the *normative case* (1994). Closely related to this is the sixth category which considers environmental degradation as an issue for human security (chapter 10 in Part III). The most important underlying theme (and tension) in the environmental security literature is the (open-ended) question of the desirability of understanding environmental issues as security issues. Securitising environmental issues calls for extraordinary responses from governments equal in magnitude and urgency to their response to (military) security threats. Hence the identification of the final category (securitisation) which concerns the 'political rationale' of environmental security (Soroos 1994). This securitisation issue pervades all of the literature and recurs throughout Parts II and III. To stress the point again, these categories should be seen as general subsets rather than hermetic entities, there is considerable overlap and there are common themes that run throughout all the categories.

Establishing the links between each of these categories is an imprecise exercise. These are depicted in the heuristic guide, but their implications should not be overstated. The most salient point is the way in which redefining security and securitisation can lead to either a focus on national security or on ecological security, and that these two referent objects are closely associated with a concern for conflict and a concern for human security respectively. The heuristic guide also

implies a disjuncture between national and human security (no links), a reasonable assumption given their different ontological predispositions (see chapters 7 and 10). Further, there is for the most part no connection between the theoretical concern about environmentally induced conflict and the ecological security approach (see chapters 6 and 9). Finally, the category that considers the effects of the military in war and peace can also be analytically linked to both of these major constellations in the literature, but the link between this and the redefining security and securitisation categories is generally not well made.

There is one other obvious feature of the heuristic guide presented in figure 1, that is the depiction of a positive-negative peace continuum. Again, this should be regarded as a device to aid comprehension rather than an definitive classification. The continuum implies that those approaches that are concerned with conflict and national security adopt a negative peace/security perspective, and those that favour human security and ecological security adopt a positive peace/security approach. Attempts to redefine security, discussions of the impact of the military in war and peace, and the question of securitisation are all, more or less, neutral with respect to this positive-negative continuum (however the tone and implications of these tend to favour positive peace). Finally, concomitant with this positive-negative continuum is a policy focus that respectively favours proactive as opposed to reactive solutions.

Chapter 4. Security: Conceptual Notes and the Realist Approach

4.1 Introduction

Having discussed sources and changes in the nature of insecurity throughout time (chapter 3), this chapter seeks to discuss the meaning of security. This is considered necessary for three reasons. First, the idea of environmental security stems mostly from the discipline of International Relations' understandings of security, the dominant approach being that of political Realism. A preliminary understanding of this therefore enables a better appreciation of the environmental security literature. Second, and related to the first point, environmental security involves reconstructing or reconceptualising security to some degree. Any attempt to understand environmental security must therefore appreciate the Realist approach and the way it has conferred power and plausibility to the concept of security (Walker 1997). Third, the concept of 'security' warrants exploration as it distinguishes 'environmental security' from other environmental problem-solving concepts, such as sustainable development.

There is a massive amount of political science and International Relations literature that addresses the concept of security. This chapter seeks to make a brief discussion of some of the key themes of this literature. It does not seek to offer a definitive review. The aim of this chapter, then, is to sketch the general dimensions of the concept of security so the security element of environmental security can be better understood, and to outline the basic features of the dominant Realist approach for the purposes of contextualising the idea of environmental security in the broader literature. This chapter begins with a brief and general discussion of the concept of security. It then outlines the basic features of the political Realist conception of security which informs the national security policies of most, if not all nation-states. Critiques of this Realist approach are briefly discussed.

4.2 Conceptual Notes

Security is a universal yet nebulous concept. It is a concept that, despite lying at the heart of contemporary political theory, has generally been under-theorised (Buzan 1991a, Baldwin 1997). The word 'security' comes from the Latin root meaning 'lack of care' (Dower 1995). According to the *Shorter Oxford English Dictionary on Historical Principles*, security is:

> 1. The condition of being protected from or not exposed to danger; safety. 2. freedom from doubt. Now chiefly, well founded confidence, certainty. 3. Freedom from care, anxiety or apprehension; a feeling of safety (Little et al 1973: 1927)

The use of 'secure' as an adjective is dated to 1533, and is defined as:

> 1. without care, careless; free from care, apprehension, anxiety or alarm (Little et al 1973: 1926).

The use of 'secure' as a verb is dated to 1593, and is defined as:

> 1. To make free from care or apprehension.. b. to satisfy, convince. Also to make (a person) feel secure of or against some contingency (Little et al 1973: 1926).

The concept of security, then, has historically been concerned with safety and certainty. It also infers maintenance of the status quo.

Security is, in general terms, something intuitively desirable. It can be characterised in two ways. First, it can be subject specific in that it entails stability in the face of a particular risk. The particular risk can be referred to as the *what* of security. The risk of food shortages discussed in the previous chapter is an example of an answer to this *what* question. Second, security can be more generically understood as an entity in its own right, ie a state of low risk and (relative) stability of all things to a given person or community. In both cases there is a particular object or group to be secured (Dower 1995). The particular entity to be secured can be referred to as the *who*, or referent of security. In the case of the uncertainty of food availability, the *who* to be secured is the group at risk of food shortages. As a minimum standard, both the *who* and the *what* questions ought to be satisfied in any consistent discussion of security.[1] Further, in as much as contemporary understandings of security talk in terms of *threats* and *dangers*, it is often revealing to ask *where* does the threat come from and *how?* In the case of

[1] A recent publication by the Canadian Global Change Program (1996) sought to provide an overview of environmental security, but "chose not to define security" (p.3). No clear sense of security or environmental security is stated up front. This enabled it to offer a particular interpretation of what it deemed to be important (environmentally induced conflict and national security) to the exclusion of other interpretations of security and environmental security.

food insecurity the answer to these questions is systemic social and ecological failures which defy the ascription of threat to any particular agent in any specific place (see chapter 3).[2]

The concept of security is inherently about risk and vulnerability, regardless of whom is vulnerable, what the risk is, and how it is generated. Risk is an inescapably subjective assessment. There is no purely objective basis upon which to assess the probability of food shortages, military aggression, a nuclear reactor accident, or rape. We can say, on the basis of evidence, that such events might in a general sense be more or less likely, and we can consider with some accuracy the *impact* of such an event, but we cannot objectively quantify the risk *per se* (Smithson 1989, Wynne 1992). The assessment of risk and security, therefore, is a *personal* and value laden process, as such, a judgement made by an expert on the behalf of others should be open to debate. The availability and character of information and knowledge therefore become important components of risk assessment. Expert assessments of risk and security are suspect when the knowledge that informs them is not freely available, or is ideologically laden.

So there is no 'reality' to risk and security. This makes it possible for people to feel secure despite a seemingly high degree of risk, and conversely, to feel insecure yet be relative free from risk (Dower 1995). On the basis of evidence presented in chapter 1, this thesis clearly considers that environmental degradation is - and may increasingly be - a significant risk to the welfare of people, yet the degree to which this is perceived by most people is questionable. Alternatively, the likelihood of military aggression against a country such as Australia is (at least implicitly) considered by policy makers to be high (hence billions spent on defence), yet the likelihood that Australia will be invaded is arguably extremely low.[3]

The meaning of security is thus ambiguous and contested (Buzan 1991a). Security can mean different things to different people, although this is not always obvious when reading the mainstream literature on the concept. The remainder of this chapter addresses the political Realist approach to security which dominates contemporary political discourse, and which conditions much of the environmental

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[2] Other questions that might be asked of security are - *how much security? - by what means? - at what cost?* - and *in what time period?* (Baldwin 1997).

[3] True, Australian defence policy does at times recognise that the likelihood of military invasion is low, yet paradoxically, defence spending remains high.

security literature. Approaches to security which radically differ from Realism are discussed in chapters 9 and 10.

4.3 The Realist Approach to Security

The so-called political 'Realist' approach to security views the state as a unitary and rational political actor. It understands the international arena (and nature) to be anarchic, with no rules or norms to guide behaviour. Realism views the state's ability to use force to be both the principal threat and principal means to national security. Keohane and Nye summarise the Realist approach:

> Realist assumptions define an ideal type of world politics. They allow us to imagine a world in which politics is continuously characterised by active or potential conflict among states, with the use of force possible at any time. Each state attempts to defend its territory and interests from real or perceived threats. Political integration among states is slight and lasts only as long as it serves the national interests of the most powerful states. Transnational actors either do not exist or are politically unimportant. Only the adept exercise of force or the threat of force permits states to survive, and only while statesmen succeed in adjusting their interests, as in a well-functioning balance of power, is the system stable. (Keohane and Nye 1989: 24).

Norms that undergird the Realist approach to security include:

> A 'bad faith model' of human nature as self-serving and conflict prone;
>
> The balancing of national (military) power as means to provide stability and order;
>
> 'Hegemony' of the major military powers to ensure for themselves a manageable and predictable international system;
>
> Independence from all links that might limit state power;
>
> Intervention in the affairs of other states if necessary (the pragmatic recognition of sovereignty);
>
> 'National interest' and nationalism as key concepts;
>
> A 'them vs us' mentality;
>
> Violence as a legitimate means of conflict resolution.
>
> (Gurtov 1991: 16).

This discussion is aware that the meaning and effect of Realism can be overdetermined.[4] Nevertheless, Realism is the dominant academic and policy

[4] A more subtle understanding is that Realism and its International Relations counterparts of 'idealism' and 'liberalism' depend on each other and share an instrumental conception of politics. As Walker observes, the opposition between Realism and idealism serves as a "substitute for serious theoretical reflection and critical engagement" which reduces historical and philosophical positions to a "very simple opposition" (Walker 1993: 107).

approach to security; it is "the most common metatheoretical discourse among practitioners of the discipline of International Relations" (Campbell 1992: 4).[5] There are different forms of Realism and there are subtle nuances that evade capture in a brief summary such as this, however common to all is a belief that the world is populated by unitary 'rational' actors called states, and that these are discrete and autonomous entities which (following a simple abstraction and a conflation of polity with personality) behave similarly to the way individual people are thought to behave (in Realist terms as rational competitive actors) (Palan and Blair 1993).

A cogent definition of security from the Realist perspective is difficult. Clements is perhaps closest to the mark in saying that security is "whatever national security elites say it is" (1990: 3). However, in general the 'who' of the Realist understanding of security is the nation-state, the 'what' is most frequently war, and the source of the threat is 'other' groups of people. For Realists, 'peace' is seen as a contractual matter rather than as a moral obligation. In this view, peace means the absence of direct violence (notably war), and this is at best a temporary abeyance of the inevitable recurrence of conflict: "in relation to the contract, peace is, by definition, an armed peace" (Paggi and Pinzauti 1985: 6).

Political Realism is nominally connected to the works of Machiavelli (1469 - 1527) and Hobbes (1588 - 1679).[6] However, it is misleading to place both "in the same undifferentiated category of political Realism" as they are both are open to sharply different interpretations (Walker 1993: 112). Realist readings of these (and other historical figures) are simplified to prove an ideological point:

> In place of a history of political thought is offered an ahistorical repetition in which the struggles of these thinkers to make sense of the historical transformations in which they were caught are erased in favour of assertions that they all articulate essential truths about the same unchanging reality and usually tragic reality: the eternal game of relations between states. (Walker 1995: 322).

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[5] Cheeseman and McKinley state that "Realism is the dominant perspective in Australia (as well as many places elsewhere)" (1990: 3).

[6] The historical origins of national security were discussed in the previous chapter. It was suggested that the predecessor of the nation-state - the city-state - was engaged in the expansion (and defence) of the area under its control, and that it synergised this expansion with its internal constituents through an informal contract whereby protection was offered in exchange for revenues and labour to pursue 'national security' (Lipschutz 1992a). It was also suggested that the Treaty of Westphalia (1648) set the standard model for international politics when it tied together sovereignty and territory as the defining characteristics of the autonomous state. National security is a consequence of this emergence of the territorially defined and militarily capable sovereign state as a law unto its own. Indeed, for Paggi and Pinzauti "security is the constitutive principle of the modern state" (1985: 8).

Realism therefore treats history as "a quarry providing materials with which to illustrate variations on always recurrent themes" (Cox 1981: 131). So, although the materials Realism uses are of historical origin, its approach is in effect ahistorical.

The 'classical' Realism that resurfaced after the second world war defined itself against the failure of the interwar period - particularly the policies of British Prime Minister Neville Chamberlain - to prevent the outbreak of the second world war.[7] Realism recentred security in the autonomy of the nation-state and reinstated the explicit consideration of force as a means to resolve conflict between states (Baldwin 1995). A number of works were written which outlined the Realist approach to security. An important forerunner was Carr's *The Twenty Years Crisis* (1939), but the most frequently cited 'great text' of Realism is Morgenthau's *Politics Among Nations* (1950). Morgenthau considered that the security of the state was best achieved by the maximisation of military power which in turn depended on national economic scale and territorial size, national self sufficiency in resources, and strong technological capability (Morgenthau 1950).[8]

Waltz's *Man, the State and War* (1959) is seen to be the harbinger of neo-Realism. Waltz considered independence to be both the means and the ends of national security policy, and that military power was essential to defend against hostile states (Waltz 1959). Neo-Realism is a modified version of classical Realism and there are some differences between the two. However, both neo-Realism and classical Realism focus on state-centricity and have a foundational belief in anarchy, so this thesis does not make much of the difference.[9]

The phrase 'national security' took on renewed importance at the end of the second World War. An important early event was Secretary for the U.S. Navy James Forrestal's speech to a Senate hearing in 1945, where the term 'national security' was reasserted (Griffiths 1997). With the advent of the cold war, security studies was increasingly conflated with strategic studies, particularly in the United States. Baldwin discusses the effect of the cold war on security theorising:

> The cold war ... focused attention on nuclear weaponry and strategies, on East-West relations, and on the security problems of the United States and Europe ... the primacy of national security, defined largely in military terms,

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[7] Between the world wars the approach to peace and security was one which emphasised democracy, arbitration, disarmament and collective security (Baldwin 1995).

[8] He also introduced an element of scientific rationality into the Realist understanding of security (George 1994).

[9] The distinction between Realism and neo-Realism is ably discussed in Burchill (1996a), and in a more critical way by George (1994).

> came to be viewed more as a premise than as a topic for debate. Similarly, military instruments of statecraft became the central, if not the exclusive, concern of security specialists. (Baldwin 1995: 126).

The influence of Realism can clearly be seen in contemporary Australian security policy. The 1994 Australian Defence White Paper opens with a chapter titled 'Defence and Australia's Security', the first sentences are:

> The Government has a fundamental responsibility to ensure Australia's defence. It meets this responsibility by ensuring that we can prevent or defeat the use of armed force against us. To do that we maintain defence forces .... (Commonwealth of Australia 1994: 3)

The Realist element is clear, security equates with the nation and with military capability. Alternative approaches such as alliances and treaties are considered, but the ultimate backstop, and the overwhelming paradigm, is military capability.[10] More recently the current Australian Government has said:

> If a nation is to be truly sovereign in the eyes of the world it must have the capability to deter threats to its interests and to counter threats to its security with military force if there is no other recourse left to it... the best way to ensure the security of Australia is to maintain a capable defence force .. we have adopted a policy of defence self-reliance .. this means that Australia should be sufficiently armed to meet foreseeable security threats ... (Liberal and National Party Coalition 1996: 3 and 10).[11]

This Realist approach to security prevails in Australia despite it being "arguably one of the least militarily threatened states on the planet" (Dalby 1996a: 59).

The Realist approach to security justifies large expenditures on defence. This is arguably economically counterproductive, and it is counterproductive to the welfare of domestic citizens (Ball 1985, Deger and Smith 1985, Luckham 1987a and 1987b). That military expenditure is also detrimental to peace, development and ecological sustainability has been established in a series of reports including *North-South: A Programme for Survival* (ICIDI 1980), *Common Crisis North-South: Cooperation for World Recovery* (ICIDI 1983), *The Relationship Between Disarmament and Development* (United Nations 1982), *Common Security: A Blueprint for Survival* (ICDSI 1982)[12], and *Our Common Future* (WCED 1987).

Realism discounts the significance of social relations to international politics. It understands the state as a 'given' rather than as a socially constructed

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[10] Sylvester (1996) provides an excellent critical reading of The Defence White Paper.

[11] See Cheeseman (1993) for a critique of Australia's policy of defence self-reliance, and Cheeseman (1996) and Cheeseman and Bruce (1996) for critical insights into Australian security policy.

[12] Although these earlier reports can be seen as somewhat neo-Realist in orientation.

and therefore mutable entity. Indeed, for all the emphasis Realism places on the nation-state, there is a general absence of theorisation about the state itself (Walker 1993). Because Realism believes that anarchy and power are fundamental and permanent conditions of social life, it is incapable of offering meaningful alternatives to the current system. In this respect Realism is conservative, its commitment to the world *as it is* forecloses on the possibility of change, and instead it reasserts (continually) the impossibility of lasting peace (Linklater 1995).

The 'reality' of the world which Realism depicts is open to differing interpretations. Realism tends to describe the world in the way it thinks it is rather more than it tell us how things really are (Walker 1997). A well known effect of the Realist belief in anarchy and the utility of military power is that of the 'security dilemma', in which the individual pursuit of military power exacerbates insecurity among nations, causing each to procure more weapons to secure themselves, thereby generating more insecurity and triggering an arms race.[13] Realist discourse portrays the security dilemma as inevitable, making the expertise of Realists indispensable for a nation to successfully negotiate world politics.[14] However, from a critical perspective the security dilemma is the (not inevitable) product of Realism's particular representation of the world. The security dilemma is thus the 'unreason' in Realist security rationality.

The widely applied policy of procuring national security through military capability creates a strategic rationality which permeates contemporary understandings of international politics (Buzan 1991a). This strategic rationality:

> (T)akes objective defence capability (eg. weapons) as its figurative form. Thus, defense postures become a pretext for the hidden value of security, a value which can then remain undifferentiated or assumed since it appears to be less substantial in comparison to a concrete interest in an array of weapons (Dyer 1996: 30).

Strategic reasoning "is engaged in the construction and circulation of particular visions of political life" (Klein 1989: 99). Realism's strategic visions become

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[13] India and Pakistan's individual testing of nuclear weapons in May of 1998 is a recent example of the threat perception-armaments cycle. Both arguably perceive a threat to their national security from each other, and from China, and this forms the principal justification for the development of a nuclear weapons capability. The rhetoric of the enemy is deployed to foster nationalist sentiment which serves to enhance the legitimacy and re-election prospects of the respective governments.

[14] Booth (1997) suggests that the internal culture of the security policy-community works toward the exclusion of confounding evidence, and favours self perpetuating and self aggrandising scholarship.

reified as political praxis as the language "creates that to which it purports to be responding" (Klein 1989: 100). Thus strategic discourse is "the intellectual sphere within which these practices of 'organised peacelessness' become standard operating procedure" (Klein 1989: 102). This is a deeper reading of the security dilemma, a dilemma which would not be if Realism did not construct a world of anarchy and brutality.

Realism's belief in autonomy and self-sufficiency as a condition of security is questionable. Autonomy and self sufficiency are arguably not possible and are indeed counterproductive to national security in a world of 'complex interdependence', an image of the world which, according to Keohane and Nye "comes closer to reality than does Realism" (1989: 23). Interdependence is arguably a more accurate concept for describing international relations. It suggests that trade, a variety of international organisations, person-to-person exchanges, and telecommunications linkages are more characteristic of the relationship between countries than is warfare (Stephenson 1988). Indeed, "the practical exigencies of world politics in our time mean that interdependence is an unavoidable condition and autarky nothing more than an illusion" (Campbell 1993: 95). Interdependence implies that because nations are economically interdependent, seeking autonomy exacerbates national (and ultimately global) risk and uncertainty.

So, Realism discounts the possibility that the international system is regulated by principles other than that of power. It holds to a crude understanding of the world as it was in the pre-modern era, where there was a convergence of the state as the dominant site of politics as well as the primary economic unit (Walker 1987b). Hence, crudely speaking, Realism has difficulty countenancing the possibility that states may act in common to ensure the absence of war, or to secure steady economic growth, or for any other collective project (like those needed for environmental problems). But in an era of globalisation and transnational capital, economic relations are crucial determinants of international relations (Halliday 1994).[15]

It is necessary to question who is being secured by national security discourse and policy. For Luckham the answer is "either particular states ... or

[15] Fukuyama (1992), for example, considers liberal-democracies to be inherently peaceful (at least in terms of the absence of war), because they supplant warfare and military power with the imperative of growth.

particular social classes" (1984: 160). National security and its armament culture is an ideological tool "to extend the hegemony of national ruling classes .. by using the rhetoric of armament, nationalism and empire, these classes can put forward claims to allegiance which transcend the confines of class politics" (Luckham 1987a: 26). So, the Realist view of political life as a system of domination is less a representation of reality and more a discursive depiction that serves the interests of those in power. National security therefore secures the state (and as we shall see generates the 'nation'), but does not really secure many of the constituents of the nation-state.

That Realism serves the interests of the state elite is demonstrated by the use of national to justify *internal* surveillance and oppression. National security discourse is engaged in the identification of threatening 'Others' who provide "the justification for limiting political activity within the bounds of the state" (Dalby 1990b: 172). Throughout the cold war the states aligned with both the Soviet Union and the United States monitored and persecuted domestic individuals and groups which held different political values. In the U.S. the repression of socialist and communist movements was seen to be justified on the dubious grounds that these groups were unpatriotic and a threat to national security. The real threat posed by these groups was the possibility that they might undermine the legitimacy of the state and its elite.[16] So national security discourse *secures itself* from debate and democratic participation by invoking the supposed necessity for secrecy, and by setting standards of behaviour that make challenging the wisdom of national security an 'unpatriotic' act. That national security discourse serves the security makers and justifies control of the populace leads Dalby to understand security as "a relationship of power" (Dalby 1991: 11). In this relationship the needs of the people are vastly subordinate to the need to maintain the legitimacy of the state and the elite.

National security discourse depicts the 'outside' world as a dangerous place. This marginalises consideration of domestic sources of insecurity. Violences such as rape, disappearances and unlawful imprisonment are scripted as subordinate insecurities to the meta-insecurity of warfare. Hence what goes on *within* the state

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[16] Toynbee critiques a western catchphrase of the time referring to the presence of the communist enemy within and without: " 'Better dead than red' is a value judgement that a twentieth-century human being is entitled to make only for himself and not for any other human being, either alive or unborn. If 'better dead than red' is his considered judgement, he can act on it, without much inconvenience to his neighbours, by putting his head in a gas oven after turning on the tap" (Toynbee 1966: 49)!

is a peripheral concern to Realist security discourse.[17] Marginalising the domestic conveniently ignores the many ways in which the state is a principal source of insecurity. Therefore national security discourse is complicit in the generation of insecurity within as well as between states; so "the more security is defined in terms of the interests of the citizens of states, the more it is undermined for the inhabitants of the planet" (Walker 1987a: 178). To return to a common theme, then, security policies informed by Realism undermine *human* security.

The Realist approach has firmly established the label 'security' as an "indicator of a specific problematique, a specific *field of* practice" (Waever 1995: 50). Waever calls security a "speech act" in that when the state refers to a particular problem as a security problem it asserts its control over that problem (Waever 1995: 55). Historically:

> The use of this speech act had the effect of raising a specific challenge to a principled level, thereby implying that all necessary means would be used to block that challenge. And, because such a threat would be defined as existential and a challenge to sovereignty, the state would not be limited in what it could or might do (Waever 1995: 56).

In a similar vein Dillon calls security "a principle of formation that does things" (Dillon 1996: 19). This is a critically important aspect of the use of security, it enables political action. This is an important and underlying theme of the politics of security and environmental security.

The Realist vision of politics so dominates modern politics that other expressions and understandings of politics have been marginalised, if not in certain times and places erased (Walker 1997). Thus:

> The dominant understandings of what politics is all about, and thus of what security must mean, arise precisely because the very form of statist claims to a monopoly on legitimate authority challenges the possibility of referring to humanity in general - and by extension, to world politics or world security - in any meaningful way.... State sovereignty defines what peace can be and where peace can be secured: the unitary community within autonomous states (Walker 1997: 73 - 74).

The most basic and ongoing challenge of critical security studies is to escape this narrow account of political life. This thesis makes the attempt in chapters 9, 10, and 11.

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[17] However, as suggested above, what goes in within the state is of concern to security practitioners (if not their discourse) in so far as this may threaten the legitimacy of the state and its elite.

Realist accounts of national security understand power in terms of the ability to control space (Dalby 1990a). For example, according to Gray "there can be no .. escape from the struggle for power" because "the influence of the geographical setting upon international power relations is so pervasive" (Gray 1996: 254 and 259). Considerable attention has been paid to these geopolitical formulations which underwrite Realist conceptions of national security.[18] The 'practical geopolitical reasoning' that informs national security policies portrays a world of geographically delimited Others who must be controlled if the 'we' of the nation is to be secure (Dalby 1990b, O'Tuathail and Agnew 1992). In this Realist description of the world the complex geographies of global ecological, economic, cultural and political processes are all reduced into a simplistic dualism between inside and outside. Thus O'Tuathail and Agnew suggest that Realism's geopolitical reasoning entails the "suppression of the complex geographical reality of places in favour of controllable geopolitical abstractions", and so security logic is "anti-geographical" (O'Tuathail and Agnew 1992: 195 and 191). Dalby suggests that these constructions of space are indeed "political constructions", and so the geopolitical formulations that inform national security are ideological more than geographical (Dalby 1990a: 40).

The particular and limited geographic imagination of Realist security discourse helps to secure the common identity necessary for the 'nation' in the nation-state (Campbell 1992). The inside/outside binary which underlies Realist accounts of national security assumes:

> Simplistic constructions of places as stable entities with discrete and permanent boundaries ... what is usually rendered secure .. is a particular geopolitical entity, an understanding of who the 'we' who are threatened are; one usually defined at least in part in contradistinction from the external 'other' (Dalby 1996a: 60).

So, national security discourse is a key part of the way the state universalises identity and seeks to control difference. It constructs a particular yet universal conception of national identity which is intolerant of difference. In turn, national security policy "must protect the inside from the outside, or everyone must be brought inside, into a realm of identity" (Walker 1987b: 20). The construction of the inside/outside dichotomy and the bolstering of nationalism in this way is integral to the reification of sovereignty (Giddens 1985a).

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[18] See for example; Agnew 1998, Dalby 1990a, Dalby 1994a, Dalby 1996a, Dalby and O'Tuathail 1996, Dalby and O'Tuathail 1997, Dodds 1994, O'Tuathail 1996, O'Tuathail and Agnew 1992.

The Realist approach to national security is rife with dualisms. Indeed, "prevailing conceptions of security are unthinkable without them" (Walker 1987b: 4). The complementary inside/outside and Us/Other dichotomies truncate meaningful examination of the links between the causes and effects of insecurity. The responsibility for threat - and the necessity to organise society to meet it - is attributed to the distanced 'other' on the outside, in this way "our complicity in evil is erased" (Campbell 1993: 3). Thus the mutual nature of the security dilemma is suppressed, Klein calls this a "textual strategy to mask responsibility" (1989: 104). The dualisms underlying Realist accounts of security intertwine with this masking of responsibility: "in the mouth of the enemy, peace means war, and defense is attack, while on the righteous side, escalation is restraint, and saturation bombing prepares for peace" (Marcuse 1964: 261). However, in thinking critically about insecurity it becomes clear that the enemy is also Us (Walker 1988, Dalby 1998a). Both the Us and the Other are abstract and spatially simplistic constructions of community. Policies premised on these constructions do little to meet the needs of most people in most places.

A more Marxist mode of analysis such as that of Marcuse suggests that the construction of the Other as enemy is a deliberate tactic to foster domestic economic mobilisation:

> The Enemy stimulates growth and initiative .. by virtue of the fact that the whole of society becomes a defense society. For the enemy is permanent. He is not in the emergency situation but in the normal state of affairs. He threatens in peace as much as in war ... he is thus being built into the system as a cohesive power... The Enemy is the common denominator of all doing and undoing (Marcuse 1964: 51-2).

In a not dissimilar vein Klein (1997) implicates the Realist notion of security in the generation of Western political/economic hegemony. Emerging in the post-World War II era, security became the "mechanism for binding the civil societies of the West and its aspiring allies" as liberal societies sought to construct a global order that conformed to Western norms (Klein 1997: 362). The Realist exploration of security dilemmas and anarchy therefore masks the "deeper global politics of state building, elite recruitment, modernization, military-police training, and societal incorporation" (Klein 1997: 362). So, security is a cultural practice that defends a common way of life (Klein 1997: 362). This is a little appreciated aspect of (Realist) national security, but is one which will be explicated in chapter 7 when recent U.S. environmental security pronouncements and initiatives are examined.

That Realism clearly favours the nation-state and treats it as a coherent, natural and preordained entity excludes the historicist understanding (made in the previous chapter) of the state as a particular product of recent history. So, with Realism "the historicity of states and state systems recedes into the background, and world politics begins to be portrayed as a permanent game, which can appear to have followed the same rules more or less since time immemorial" (Walker 1995: 321). A narrow reading of history also explains Realism's bad faith model of human nature, exemplified by Morgenthau: "*all* history shows that nations active in international politics are continuously preparing for, actively involved in, or recovering from organized violence in the form of war" (cited in Keohane and Nye 1989: 23). This approach not only reduces the history of politics to an ahistoric nation-state, it also denies alternative readings of history. For Dalby "this denial of history reduces the possibility of politics, by erecting the spectre of the permanent adversary, against which perpetual vigilance is needed" (1990a: 158). However, as Gandhi reminds us, history is a ledger of rare instances of violence rather than a record of more commonplace instances of cooperation (Gandhi 1951).

From the feminist perspective, Realist accounts of international relations and security "are defined in terms of everything that is not female" (Tickner 1992: 130). The human nature that informs Realism's understanding of social behaviour is that of a (instrumentally) rational, power seeking, competitive, independent and autonomous individual.[19] For feminists this is an idealised masculinity that reflects prevailing gender relations and excludes alternative modes of being and reason (Enloe 1990, Tickner 1992). Feminists argue that this metaphoric individual is abstracted from the social context, and that were this individual properly contextualised, relationships that are not merely of the self-help kind would be identified (True 1996). The Realist account of state behaviour is informed by this selective understanding of human nature, and so security becomes a necessity between states in the same way that it is seen to be a necessity between individuals. This man/state analogy inscribes a male-masculine identity onto the state (Sylvester 1994). Further, feminists see important connections between national security, patriarchy, militarisation, nationalism and masculinity. These are

[19] There are clear parallels between political Realism and neo-classical economics, both are founded on a similar (masculine and abstract) social ontology (see Tickner 1992). In this respect *Homo economicus* is consistent with *Homo securitas*.

seen to be mutually reinforcing such that the security-military-industrial system is maintained (Enloe 1987, 1998a; Elshtain 1987).

From a Green theory perspective the Realist approach to security is flawed for the most part by its association with modernity and its ecologically and socially disruptive effects (see chapter 3). The Realist account of security owes its inception to the same Enlightenment philosophy that produced industrialisation, economic growth and instrumental reason. Indeed, at its most fundamental level, in seeking to secure the state Realist security discourse seeks to secure one of the anchor points of modernity. From a Green perspective, then, the Realist approach to security is a cornerstone of the contemporary order to which Greens attribute the degradation of the environment. Further, "Realist approaches are largely inappropriate for dealing with environmental issues because they focus on states as unitary actors, where internal factors are downplayed and they usually fail to deal with indirect transboundary effects" (Dalby 1992: 505). So, although complicit in environmental degradation, Realism is incapable of recognising the importance of environmental issues and either ignores, or at best marginalises them (Vogler 1996)

Realism also excludes consideration of ethics and so marginalises a key component of the Green transformative agenda (Laferriere 1996).[20] Laferriere suggests that Realism is the "clearest antithesis to the ecological world view", and that "Realist prescriptions cannot improve life or even preserve life: Realism's basic conception of the Other is ultimately self-defeating" (1996: 66). Not unlike the feminist critique, the Green perspective argues that atomistic and competitive individualism is not the reality of social life, instead identifying cooperation and collective behaviour as basic human traits. Like the poststructuralist critique, Green theory objects to Realism's claims to universality and the way it homogenises political life (Laferriere 1996). Laferriere summarises the failings of Realism:

> In sum, Realism's path to knowledge (and away from freedom) opposes the organicism, subjectivity, and historicism characteristic of ecological thought. 'History' may be present, but serves as either a crude source of data or as a mere 'story', a detached text, vindicating timeless assumptions about social relations and human destiny (Laferriere 1996: 69).

[20] Laferriere (1996) is favoured here as it is the best of the recent literature which addresses International Relations from an ecological perspective.

A more superficial critique of the Realist approach to security is implicit in the concept of environmental security. As chapter 5 details, the notion of environmental security emerged from efforts to include environmental concerns into the calculations of national security planners - implying that the Realist approach ignores a range of fundamental threats to national security. A deeper reading, however, focuses not only on Realism's inability to account for environmental issues, but also its failure to accommodate other referent objects of security (see chapters 9 and 10). In this latter respect, Realism can be said to monopolise the concept of security to render it synonymous with national security, and so alienates alternative claims to insecurity.

The Realist approach to security normalises danger, threat and risk. The Realist security discourse is a discourse of risk, but in its particular view the preferred risk is the menacing and eternal danger of military aggression. It sees this 'risk' as 'natural', implying that violence is a natural aspect of human nature and political behaviour. This particular discourse of risk is like all discourses of risk in that it is socially constructed. It is therefore contestable, and more than most, it deserves serious attention for its expensive habits and destructive effects. When risk is narrowly interpreted in this way, so too is the notion of resilience - as strategic planning to deter and engage with armed forces. In this sense the response of Realist security discourse to uncertainty is negative and reactive. It presents immediate solutions that are, indeed, not solutions but are exacerbations of insecurity and uncertainty. Realism's approach to change is similarly negative and similarly imbued with violence. According to Walker, Realist claims to reality are "always in danger of breaking the one cardinal rule of political wisdom: things change" (Walker 1997: 62). Because change is an inevitable aspect of life, Realism is in this respect fundamentally anti-realistic.

The power of Realist thinking is enhanced through the widespread use of Realist nomenclature - however ideologically encoded - in mainstream, if not all discussions of international politics (Burchill 1996a). In setting the vernacular, Realist conceptions of security have determined the discursive terrain upon which most subsequent discussions of security take place. This linguistic closure impedes the possibility of alternative conceptions. The very notion of a *Realist* theory is indicative of the centrifugal pull Realism has on the study of international

relations.[21] Alternatives are polemically identified as 'idealistic' or 'utopian', and so are seen to lack the explanatory and prescriptive power of the Realist account of 'reality'. The difficulty in speaking of a 'reality' has been established in chapter 2, the danger of doing so when deliberating on warfare in a nuclear age cannot be underestimated.

4.4 Conclusions

The concept of security is nebulous, but can be given greater clarity by identifying the referent object to be secured (*whose security?*), the risk to be prevented or the vulnerability to be lessened (*security from what?*), and the processes by which that risk might detract from the referent object's well-being (*insecurity how?*).

The Realist approach to security is but one particular account of political life, yet it currently dominates security discourse and policy-making. It refers to the security of the nation-state against what are seen to be deliberately imposed external threats, most commonly in the form of militant aggression. Realism is based on a (masculine) social ontology which has a limited understanding of human nature, and this understanding is then crudely abstracted to explain the behaviour of nation-states. Realist security discourse constructs threatening Others against whom the state must defend, thereby legitimating the power of the guardian elite and maintaining the privileged position of Realist theorists themselves. Historically, the Realist world view is inseparable from the emergence of modernity, and in securing the state Realism secures the environmentally-degrading modern world. Realism identifies a narrow set of risks as deliberately imposed threats. In denying alternative risks and in reacting to selected risks in a violent manner, the Realist approach to security impedes peaceful proactive behaviour. Finally, in its abstract account of political life, Realism and the practices it generates undermines the security of people and, as we shall see in chapter 8, it undermines environmental security.

Establishing the Realist approach to security is important because, as we shall see in chapters 5, 6 and 7, this approach dominates the concept of environmental security. Having explored contemporary understandings of security

[21] Not unlike the intuitive pull of 'rational' such as when used in the context of 'economically rational'. Rational in this sense is also a means to deride others as 'irrational' (Rees 1994).

in this chapter, the following chapter will explore in depth the literature which, in seeking to 'redefine security', introduced environmental considerations into mainstream security discourse. This served to broaden the array of responses to the question *security from what?* beyond military threats to encompass economic, energy, food and environmental issues.

Chapter 5. Redefining Security

5.1 Introduction

The previous chapter discussed the core features of the Realist approach which dominates the meaning and practice of security and, as we shall see in later chapters, environmental security. This chapter seeks to examine the origins of environmental security.[1] It discusses alternative conceptions of security which provide alternative answers to the question - *security from what?* (approaches which provide alternative answers to the question - *whose security?* - are considered in chapters 9 and 10). This discussion is limited to considering those attempts to rethink security which began in the 1970s, a trend which coincided with the period of detente between the superpowers and the integration of critical theory into the social sciences. It does this by first briefly discussing an array of so called 'new' security issues. The early literature which considered the environment to be a security issue is then discussed, followed by consideration of the notion that environmental problems require a common and comprehensive approach to security. Some of the difficulties with these new definitions of security are then considered.

5.2 Beyond Military Threats: New Security Issues

Since the 1970's different types of risks to national security have been identified, a common understanding is that "new threats are emerging, threats with which military forces cannot cope" (Brown 1977: 5). Buzan categorises these new threats into different 'sectors' or components (1991a, 1991b). He identifies military, economic, political, social and environmental components.[2] Other components

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[1] This chapter is based on Barnett 1997b.

[2] For Buzan, political security is about "the organisational stability of states, systems of government and the ideologies that give them legitimacy", and societal security "concerns the sustainability, within acceptable conditions for evolution, of traditional patterns of language, culture and religious national identity and custom" (1991a: 19). It is no doubt possible to conceive of political and societal security differently to the way Buzan does. Buzan's definitions fundamentally pertain to the maintenance of the requisite conditions for nationalism and national resilience, as such they do not in any substantive sense decouple security from the state. Buzan remains constrained by Realism and captured by state-centrism (see Walker 1987b, Dalby 1991, and Shaw 1993).

can be identified and the notions of energy and food security will also be considered here. Military security was considered in the previous chapter.

5.2.1 Energy security

It was noted in chapter 3 that energy use has increased massively since the onset of the industrial revolution, and particularly in the post-WWII period. This expansion received a severe setback in 1973 when the Organisation of Petroleum Exporting Countries (OPEC) quadrupled the price of oil on world markets, creating considerable anxiety for both industrialised and industrialising economies alike (Dovers 1994). By constricting temporarily the lifeblood of industrial economies (energy), the oil crisis demonstrated the vulnerability of national economies to the dictates of the global economy: "for the U.S. public, the lines at the gas pumps which the OPEC crisis produced forced a rapid understanding of our economic and energy interdependence" (Stephenson 1988: 62). The current notion of 'energy security' stems from this period.[3]

Energy Security is the theory and practice of 'securing' energy for the nation-state. According to a recent report by the Trilateral Commission (North America, Western Europe and Japan), energy security is maintained by utilising national power to secure a steady supply of affordable energy (read 'oil') for the purposes of economic growth (Martin et al 1996). The continued importance of oil supply is made clear in this report; the Persian Gulf War is referred to as the "successful defense of Kuwait and Saudi Arabia" and is seen to be demonstrative of the understanding that "energy security requires foresight and years of preparation" (Martin et al 1996: 16).[4] Such a Realist account of energy security is common; it involves the need to project force to secure uninterrupted supplies of oil, and it pragmatically and at times forcefully engages with nations who by dint of (mis)fortune have energy resources but apparently little sovereignty. The 1990-1 U.S. National Security Strategy was unselfconscious about this:

> Secure supplies of energy are essential to our prosperity and security. The concentration of 65 percent of the world's known oil reserves in the Persian Gulf means we must continue to ensure reliable access to competitively priced oil and a prompt, adequate response to any major oil supply disruption (Bush 1990: 83).

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[3] Energy security is not really a new concern, much of the naval conflict in Pacific during the second world war was driven by the need to secure/disrupt sea lanes for delivery of energy resources, particularly oil to Japan.

[4] Barnett (1997c) provides a review of the Trilateral Commission's report on energy security.

However, the problem of energy security is not only the need to alleviate scarcity, it also concerns the ecological impacts of burning fossil fuels. The only presently viable solution must therefore be clean renewable energy technologies such as solar and wind power, or abstinence and greater efficiency of energy use.

5.2.2 Economic security

The oil embargo accelerated examination of the economic dimensions of national security. This gave rise to the term 'economic' security, which infers regular access to those resources, finance and markets necessary to sustain national economic growth and state power (after Buzan 1991b, see also Opschoor 1989). The economic security policy-discourse of the United States confirms the suspicion that U.S. foreign/security policy is shaped by the need to protect access to materials, markets and investments (Schultze 1973). Economic security is associated with the export of capitalist values such that consumption becomes the standard of the Good life, and Western producers become the supplier of the Good (Barnet 1984). For the U.S. at least, economic security is thus a discourse of economic self interest; it justifies muted imperialist foreign policies to preserve national "economic effectiveness and independence in the global market place" (Sorenson 1990: 7). Security of supply remains the central issue (Dalby 1991). Economic security is inseparable from national security not simply because economically unfavourable conditions jeopardise the national interest, but because economic power is a crucial determinant of military power, and because the state at times uses its military power to advance its economic agenda (Kolodziej 1992). The oil embargo and subsequent exploration of economic security helped to weaken the myth of independence.

5.2.3 Food security

At the same time as the oil embargo (1973), the U.S. grain stockpile and cropland reserve failed (for the first time) to hedge against global food shortages (taking into account distortions in distribution), and the concept of 'food security' became a practical concern (Brown 1977). Like the oil crisis, the impending food shortages highlighted the vulnerability of those countries which depended on outside sources for food (Myers 1986). Food security has been understood primarily in terms of national resilience, as "a common source of political instability" (Brown 1977: 7). Thus the notion has remained captured by Realism's state-centricity. However, in a more intuitive sense, food security introduced a

dimension to security that could not be completely fixed to the nation-state. Couched in terms of Maslow's hierarchy of needs, food (and water) security pertains as much to the basic right of people to fundamental subsistence requirements (Maslow 1954). Later understandings of food security have broken away from the statist perspective, for example the UNDP defines food security as the right of all people to physical and economic access to basic food (UNDP 1995). This understanding of food security (for people) is closely related to that of 'environmental security' (for people): "for rural producers in developing countries, the distinction between food insecurity and the environment does not exist" (Davies et al 1991: 19).

5.3 The Environment as a Security Issue

Environmental degradation has been a central issue in the reinterpretation and redefinition of security.[5] Richard Falk's (1971) *This Endangered Planet* is a landmark in the literature that links environmental issues to security. Falk did not coin the phrase 'environmental security', but he established many themes central to the subsequent literature. His basic point was that the international political system is unable to come to grips with environmental degradation as a security problem; for example: "specialists in foreign policy or world affairs still seem oblivious to the relevance of environmental hazard to their professional concern with the management of national power" (1971: 181).

A particularly insightful passage from Falk begins by stating that "there is at yet no firm evidence that human nature is violent by genetic disposition" (Falk 1971: 59). It then goes on to describe the relationship between resource scarcity and violence as being one of the mobilisation of the already powerful to defend against those who have less power:

> (U)nder world conditions of insufficient resources to satisfy total demand there is a natural tendency for those with less to seek a larger share. This tendency induces those with a larger share to organise their defences against those with less and to use their superiority to obtain still more. The rich get richer, the powerful grow more so (Falk 1971: 59).

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[5] It could be argued - via a definition of environmental security as a biosphere free from anthropogenic disturbances - that earlier environmental texts were implicitly about environmental security; Carson's (1962) *Silent Spring* would certainly qualify in this respect. However, what is being considered here is that literature which explicitly links environmental problems to the concept of security.

So, for Falk, the powerful are likely to deploy the means of violence to maintain their power in the face of increasing calls for justice. This can be understood as counterrevolution (see Marcuse 1972). This argument is also made by Ophuls (1977). The implication is that responsibility for violent behaviour, and conversely for finding peaceful solutions, rests primarily with the already wealthy and powerful.

Falk is not immune to the idea that engendering a sense of urgency about environmental problems is necessary to induce change. However, he is sensitive to the presentation of problems in the language of 'crisis', arguing that "the great danger of an apocalyptic argument is that to the extent that it persuades, it also immobilizes" (1971: 5). This is an observation of relevance for the notion of environmental security, which has a tendency to present environmental problems as an apocalypse and a 'coming anarchy' - bringing disease, pestilence, famine and warfare (Kaplan 1994). This kind of approach arguably does little to stimulate constructive and positive engagement on the substantive problems at hand, particularly their causes. A question emerges, then, about the politics of discourse. This pre-empts the larger debate, discussed later, of whether addressing environmental problems in terms of security is a desirable strategy.

This Endangered Planet also recognises that a parochial national emphasis restricts attention to localised environmental impacts. Falk argues that this ignores the role of the nation in generating global environmental degradation, and marginalises awareness of global responsibilities.[6] In this way a state-centric focus limits action to local adaptive measures, rather than stimulating more widespread and globally-oriented restructuring. As the speech performance which delineates the national from the global, security discourse is fundamentally implicated in these denials and emphasis shifts. Falk identifies these concerns in his response to the 1970 (U.S.) State of the Union Address:

> (N)ote that the definition of environmental problems continues to emphasise its domestic character and its sharp separation from concerns about population pressure, resource depletion, and the war system. Nothing in the recent flourishes of public concern express the realisation that we need to revamp our entire concept of 'national security' and 'economic growth' if we are to solve the problems of environmental decay. (Falk 1971: 185).

A further passages stresses the point:

> A prevalent misconception persists that national efforts, if sufficient, will guard the environment. The misconception arises from the failure to

[6] As we shall see in chapter 7, the converse - that global processes threaten national security - also leads to a denial of a nation's global responsibilities.

> appreciate the actualities of *interdependence*: what we do needs to be coordinated with what others do... (Falk 1971: 196)

Also written in 1971 was Harold and Margaret Sprout's *Toward a Politics of the Planet Earth* (1971). Like Falk, the Sprouts saw the degradation of the environment as a major problem that requires a rethink of the state and national security. The Sprouts were concerned with the way interdependence, including issues of transboundary pollution, presented problems that were "becoming increasingly resistant to military solutions" (1971: 406).

Another early publication that explored the links between environmental degradation and security is Brown's *Redefining National Security* (1977.) The title suggests that Brown remains captured by the 'national' component of security, however an underlying intent of the paper is to problematise national security practices:

> In a world that is not only ecologically interdependent but economically and politically interdependent as well, the concept of 'national' security is no longer adequate... Neither individual security nor national security can be sensibly considered in isolation. In effect, the traditional military concept of 'national security' is growing ever less adequate (Brown 1977: 40 - 41).

Brown talks specifically in terms of 'the deterioration of biophysical systems', and he identifies four systems under stress, fisheries, grasslands, forests and croplands. He also discusses the problem of climate modification, and he relates these to food security. Very little of this discussion talks in terms of the potential of environmental degradation to cause conflict, although this is given some consideration in the conclusions. The paper's main contribution is a cogent overview of the social processes that pressure biophysical systems, their physical responses, and the resulting implications for human welfare. Brown's paper should have provided policy makers and security analysts with an excellent background to the ecological dimensions of security, and its implications should have lead to a set of responses that took these causes and effects seriously. However, both the literature and the policy (see chapter 7) rarely demonstrate the same degree of awareness.

Brown considers that militaries are incapable of meeting the challenges posed to human well-being by the deterioration of biophysical systems:

> National defense establishments are useless against these new threats. Neither bloated military budgets nor highly sophisticated weapons systems can halt deforestation or solve the firewood crisis now affecting so many Third World countries. (Brown 1977: 37)

Brown therefore makes the reasonable suggestion that disarmament and budgetary reallocations are important initiatives for resolving environmental degradation.[7] A year before this, O'Riordan made a similar observation, saying that the scale of military expenditure is worth focusing on because "it exemplifies the willingness to waste valuable resources and to destroy large areas of ecological value in the interest of security" (O'Riordan 1976: 22).

In 1983 two important works were published on the subject of environment and security. The first edition of Buzan's *People, States and Fear* was a sweeping discussion of security, and it made passing reference to environmental degradation as a national security issue (Buzan 1983 - see note 2). A more influential work (at the time and in terms of environmental security) was Ullman's *Redefining Security* (Ullman 1983). The principal contribution of Ullman's widely cited paper is the definition of a national security threat as anything which can quickly degrade the quality of life of the inhabitants of a state, or which narrows the choices available to people and organisations within the state. In many ways Ullman's paper stands at the watershed of contemporary environmental security studies. It carries with it murmurings of peace and human security, yet it introduces an uncritical message of coming conflict which was has since been a key theme of the literature.

Redefining Security is notable for its crude discussion of 'Third World' poverty as an engine for armed conflict and illegal immigration. Ullman suggests that environmental degradation is "likely to make *Third World* governments more militarily confrontational in their relations with the *advanced*, industrialised nations" (1983: 142 - my emphasis). The imagery in *Redefining Security* is provocative and ethnocentric, for example: "the image of islands of affluence amidst a sea of poverty is not an inaccurate one", and "the pressure engendered by population growth in the Third World is bound to degrade the quality of life, and diminish the range of options available, to governments and persons in the rich countries" (Ullman 1983: 143). This reference to islands of affluence is indeed inaccurate, if for no other reason that this is a speculative observation about the future. It may become 'accurate' only in so far as this imagery contributes to a defensive Western disposition which reifies the theory (as we shall see in chapters

[7] Another Worldwatch publication, by Deudney in 1983, made considerable inroads into the myriad of connections between military activity, nuclear weapons, ecological interdependence and human survival; Hardin's 'lifeboat ethics' is a key theme. This is an important precursor to Deudney's later contributions to the literature.

6 and 7 it has). Further, the *assumption* that deprived 'Third World governments' may be 'more militarily confrontational' is notable. The possibility that they might seek to resist and engage for their betterment through non-violent means is not countenanced.

Ullman argues that "conflict over resources is likely to grow more intense" (Ullman 1983: 139). Lost in the analysis, however, is consideration of *who* will initiate this conflict. As Falk suggests, it may not be the poor who resort to force of arms (see above). Ullman is concerned with *national* security and threats to U.S. interests. These are identified as coming from the "outside" in the form of disrupted access to essential resources, and proxy wars (Ullman 1983: 140). To the list of traditional threats Ullman also adds the possibility of illegal immigration by environmental refugees (now a popular concern). So, Ullman views the problems industrialising countries face as problems only in as much as they might endanger the quality of life for the governments and inhabitants of industrialised countries. Little concern is paid to the problems that are experienced in these Other places, problems which are surely of concern in and of themselves. Because Ullman's paper is very much framed in terms of national security, it appeals to Realist security discourse. These early analytical closures have been subsequently rewritten throughout much of the environmental security literature.

In 1986 Myers explicitly argued for the incorporation of environmental issues into security thinking. Myers claims to have been talking about environmental security as early as 1984 when he was a "senior adviser" to the World Commission on Environment and Development process (Myers 1996: 5-6). Myers has consistently argued that environmental degradation will induce violent conflict, for example:

> If a nation's environmental foundations are depleted, its economy will steadily decline, its social fabric deteriorate, and its political structure become destabilized. The outcome is all too likely to be conflict, whether conflict in the form of disorder and insurrection within the nation, or tensions and hostilities with other nations (Myers 1986: 251).

This concern has been the most influential. In his 1986 paper Myers considers food shortages, fisheries depletion, water scarcity, climate change and deforestation to be issues likely to induce conflict. Environmental refugees also figure prominently, and he focuses solely on industrialising countries.[8] Despite the assertion that in many cases "the linkages [to conflict] are readily apparent", the

[8] For a more reasoned analysis of environmental refugees see Fell (1996), Jacobson (1988, 1989), and Kane (1995).

causal chain by which these issues might lead to conflict are not explicated, although the assertion that they might is repeatedly made (Myers 1986: 252). Indeed, Myers seems aware of this causality paradox:

> While certain of the linkages are diffuse in their workings, hence difficult to discern in their immediate operation, they are nonetheless real and important, and growing increasingly significant in their number and extent (Myers 1986: 253).

On the 'nature of linkages' Myers offers this supposed explanation:

> (E)nvironmental deficiencies supply conditions that render conflict all the more likely. They can serve to determine the source of conflict, they can act as multipliers that can aggravate core causes of conflict. Moreover they can not only contribute to conflict, they can stimulate the growing use of force to repress disaffection of those who suffer the consequences of environmental decline (Myers 1986: 253)

This is no explanation at all. Instead what is offered is a *reassertion* of the *assumption* that environmental change will lead to conflict. This is a trend that is repeated throughout most of the literature which seeks to explain the links between environmental change and conflict (see chapter 6). The danger of course is that if the assumption is made often enough, it becomes reality.[9]

What Myers does do well is explore the 'trade-offs with military-based security':

> Political leaders might ask themselves whether each additional annual outlay of, say, $25 million for extra military hardware provides a greater incremental increase in security than could be accomplished if the funds were assigned to a host of alternative ways of promoting stability through environmental safeguards. Whereas such a sum represents only an ultra-marginal expansion of many military budgets, it would make an absolute difference if applied to most national budgets for, say, improved water supplies (Myers 1986: 254).

It is difficult to disagree with this observation. However, this argument is unlikely to be an effective mobilising strategy given that it comes after a lengthy discussion of the threats to the nation from the outside (refugees, wars ect) which may well involve military engagement. There is thus a political naivety here that endangers the environmental cause. The particular combination of issues (conflict with demilitarisation) is analytically incongruent as it does more to mobilise the institutions of national security than it does to threaten them with a green peace

[9] Myers is aware, however, that environmental change "may not trigger outright confrontation", but adds that it can "help destabilize societies in an already unstable world" (1986: 252). This particular line of reasoning can be summarised by saying that violent conflict happens sometimes, and sometimes environmental degradation is implicated in this (in some unexplained way).

dividend.[10] Myers does, however, provide a definition of security which complements the positive, human-centred approach of those who seek to reclaim security to serve the interests of positive peace:

> Security applies most at the level of the individual citizen. It amounts to human wellbeing: not only from protection from harm and injury but access to water, food, shelter, health, employment, and other basic requisites that are the due of every person on earth (Myers 1996: 31)

In contrast to the emphasis on conflict present in Myers' paper, in the same year (1986) Westing entered into the debate with a more peace promoting discussion of the conceptual connections between environment and security (Westing 1986a). Westing's focus is on preventing resource wars, and on using environmental measures to strengthen international security. Westing was an early proponent of cooperation on environmental issues among states, for example:

> It is thus inescapable that any concept of international security must in the last analysis be based on this obligate relationship of humankind with its environment .... Accordingly, it is necessary that consistent with the concept of equitable utilisation of shared natural resources, States co-operate with a view to controlling, preventing, reducing or elimination adverse environmental effects which may result from the utilization of such resources. (Westing 1986a: 195).

There is a sense in Westing's early analysis that development should be conducted in as an environmentally benign way as possible. This was precisely the theme of the World Commission on Environment and Development's (WCED) *Our Common Future* (WCED 1987). Because it identifies with the earlier Brandt and Palme reports (see chapter 4), it is not surprising that *Our Common Future* made much of the links between environmental degradation and security.[11] The WCED established some important connections between peace, security and sustainable development. It also identified many of the *causes* of environmental degradation, which, in the context of the environmental security literature, is quite rare. *Our Common Future* revisited key themes of the earlier literature, including the environmental stress-conflict connection, and the need for cooperative international arrangements. It also made much of the environmental impacts of war, particularly those arising from the potential use of nuclear weapons. Significantly, the WCED report is seemingly the first to explicitly use the term 'environmental security' (on page 345).[12]

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[10] Ironically, Myers' contribution to the environmental cause is far more potent and peace promoting when he is not talking 'security' (see Myers 1979, 1984, 1987a).

[11] *North-South: A Programme for Survival* (ICIDI 1980) made passing reference to environmental degradation and security.

[12] Which might support Myers' claim discussed earlier in this section.

The environmental security literature expanded significantly after 1989, when (at least) ten articles on the subject were published.[13] The increased juxtaposition of security and environment came at a time when conventional understandings of security were no longer so obviously politically relevant (due in large part to the decline of the cold war), and when environmental concerns were increasingly in the forefront of public concerns (Dalby 1992).[14] Of these ten papers, Matthew's *Redefining Security* warrants brief discussion here. Mathew's paper consolidated the earlier insights of Falk, Brown, Ullman and Myers, and emphasised the transboundary character of environmental problems and the challenge this presents to sovereign states. Matthew's also introduced the complex issue of biodiversity into the environmental security agenda, an issue which has, by and large, remained unaddressed by the literature.[15] The paper was notable for its presence in *Foreign Affairs*, an established U.S. foreign policy journal. Publishing there meant Mathews was taking aim at "White House policymakers, the Cabinet agencies, the Pentagon, the U.S. Congress, and relevant interests groups and thinktanks" - in short the U.S. security policy community (Lipschutz 1995: 5). Mathews was seeking, then, to elevate environmental concerns to the level of security issues - in effect to 'securitise' environmental problems such that they might be accorded higher priority on the policy agenda.

5.4 Common and Comprehensive Security

A theme of the redefining security literature is that environmental degradation requires collective action, as Thomas puts it:

> A common thread uniting disparate authors is the belief that the nation state as a political unit cannot, acting alone, address successfully the problems which beset it, and that development and international cooperation are vital components in any strategy aimed at greater security nationally, regionally and globally (Thomas 1992: 117).

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[13] The idea that these should be counted can be attributed to Cobb (1996), who identifies nine papers. The ten papers of immediate relevance identified here are; Brown 1989, Carroll 1989, Holst 1989, Mathews 1989, Mische 1989, Myers 1989, Renner 1989, Schrijver 1989, Opschoor 1989, Westing 1989a (Westing 1989b might also qualify).

[14] According to Smil, environmental security has replaced the threat of global nuclear warfare as it shares two characteristics: both are global in reach and the effects of both could be highly devastating (Smil 1997).

[15] Which suggests that the prevailing environment-conflict discourse is unable to cope with issues that defy its particular amalgam of inside/outside, utilitarian and direct threat rationality.

This linking of environmental concerns with common security was clearly established in *Our Common Future* (see above). That such a *common security* approach is required is self evident given the transboundary character of some forms of environmental degradation, thus "it becomes increasingly clear that each nation is at the mercy of others' actions" (Funke 1994: 74). This leaves little choice for policy but to act in a framework of common security, and to act in such a way as to prevent the onset of environmental problems which have a transboundary character (Fairclough 1991, Porter and Brown 1991). Thus Buzan argues that "the appeal to national security has no practical logic unless it can be linked to collective action" (Buzan 1991a: 132). On issues with a regional or bilateral impact and a relatively identifiable cause, such as acid rain, a common security approach is likely to be successful (Carroll 1989). However, with respect to a global issue such as climate change, where there is uncertainty and complexity, and where tracing causes and effects exposes the contradictions inherent in modernity (ecological and social degradation, injustice and violence - chapter 3), then effective action and truly common security may be a long time coming. As Mayer-Tasch (1986) has argued, common environmental problems are far more intractable than those issues that have traditionally been the domain of common security; hence whilst environmental problems fit easily into the common security framework, the framework itself may be in need of a fundamental reform to be truly effective.

Westing is a staunch advocate of common security, but he also recognises that more profound changes are required: "threats to the long-term security of us all require for their amelioration ... economic re-ordering, and social adjustments on truly grand scales" (Westing 1989a: 130). Similar to Westing, Kakonen (1992), Stern (1995) and Thomas (1992) have advocated a *comprehensive security* approach which involves linking environmental security initiatives with a broader array of complementary activities. For Kakonen "underdevelopment and the phenomena connected with it, as well as environmental problems, are phenomena of destruction caused by development. In other words, different threats are closely connected to a set of values and a way of life.." (Kakonen 1992a: 147-148). In this respect, like Westing, Kakonen appreciates that comprehensive security must entail more than a superficial linkage of issues within a framework of common security, it must involve "a peaceful transformation of the whole international system" (Kakonen 1992a: 152). This line of thinking is no doubt correct, environmental problems cannot be seen in isolation from development and

economic issues, and any serious attempt to provide environmental security requires addressing the broad array of causes of environmental degradation; hence "a holistic conception of security is an imperative" (Thomas 1992: 151). Renner, too, has been a staunch advocate of the common and comprehensive security approach, arguing that there needs to be disarmament for there to be environmental security (Renner 1989, 1997).

Linking environmental issues into a common and comprehensive security framework has implications for existing international institutions. Various options have been proposed, including new international institutions such as a United Nations (U.N.) environmental security council, and a green cross or green U.N. police force (Schrijver 1989). However, the most immediate option is to reform and strengthen existing institutions, and it is here that Imber's work on U.N. reform has much to offer (Imber 1991, 1994). Despite an array of criticisms about the U.N., Imber is positive about its potential role, arguing that "the U.N. *is* the appropriate forum for much necessary environmental diplomacy" (Imber 1991: 211). Imber suggests that the United Nations Environment Program (UNEP) has been, and can continue to be, a valuable institution for promoting environmental concerns; he offers 'two cheers' for the United Nations Conference on Environment and Development (UNCED); and, most importantly, he suggests that, the U.N. "is the only place in which all the world's states can meet ... to negotiate new norms of behaviour and adopt binding conventions on a range of issues" (Imber 1994: 114).[16] According to Imber, the U.N. is appropriate for collecting and disseminating large data sets, for the consensus negotiation of norms, for establishing rules of law, and for the monitoring of compliance with environmental regulations (1994: 116). On the basis of these, and given the post-cold war international environment, Imber suggests that "the possibility of co-joining environment, security and U.N. reform is .. more apparent now than at any time previously" (1994: 140). This thesis is in general agreement with Imber's optimistic view of the role of the U.N. Certainly, despite many shortcomings, the U.N. has been crucial to the promotion of environmental concerns on the global agenda, and given the difficulties of international diplomacy, it must surely have a key role to play in ongoing common and comprehensive security efforts to provide environmental security (see chapter 11).

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[16] See Chatterjee and Finger (1994) for a full discussion of the shortcomings of UNCED. Imber is aware of many of these.

The immediacy of environmental problems can be seen as an important impetus to furthering collective action on a range of related common security problems; hence "environmental concerns can stimulate diplomatic cooperation which in other political contexts would be less likely" (Thomas 1992: 61, see also Burnett 1989, Zarsky 1995 and 1996). The salient point about common security is that for the most part responsibility still rests with nations who are urged to act to secure their common interests; it works by extending the logic of national security, and does not challenge the legitimacy of the way the nation-state dominates political life. A difficulty with common security then, is that it does not make clear what the (inferred) more encompassing political community might look like (Walker 1997).

5.5 Redefining Security: What's at Stake?

By the late 1980s Realism's view of security and the practices it generated were becoming increasingly untenable (Stephenson 1988). According to Stoett, the end of the cold war in 1989 lifted the "perceptual fog" which obscured certain understandings of contemporary security issues (Stoett 1995: 19). The fall of the Berlin wall ushered in a new round of identification of 'new' security issues, including pre-existing 'dangers' (mostly to U.S. interests) such as: the strength of the Japanese and German economies (economic security); global environmental change (environmental security); an array of difficulties associated with the 'Third World'; and energy availability (energy security). Other security issues which are identified include: drug use at home and drug trafficking (the 'war' on drugs);[17] failed states which may behave aggressively inwardly and outwardly; transboundary crime; hostage taking; terrorism;, ethno-political conflicts;[18] the migration of diseases and people across national borders;[19] and the threat posed by large groups of people who subscribe to a different religious orientation that that of the Judao-Christian West (Islam gets much attention) (after Campbell 1992, Dalby 1997a).[20] These new threats are still, for the most part:

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[17] Lee (1995) gives a brief introduction to this issue.

[18] Gurr (1995) offers an insightful and peace-promoting discussion of ethnic tension as a source of conflict.

[19] Chow (1996) gives a brief introduction to this issue.

[20] O'Neill (1996) seems to think that global warfare and regional scale warfare is still likely, the usual enemies of Russia, China and radical Islam are cited as being possible protagonists. Dupont (1996) also offers a Realist account of many of these 'new' security issues.

> Represented in ways that do not depart dramatically from those dominant during the cold war .... these challenges are represented as dangers located in an external and anarchic environment which threaten the security of an internal and domestic society, often via recourse to violence (Campbell 1992: 7).

It is not surprising then, that according to a U.S. defence expert "the world remains a highly uncertain place with increasingly complex and dangerous national security threats" (Holmes 1997: 1). The discourse of danger in these new security issues is thus clear, as Rosenau is wont to put it, we still live in a 'turbulent world' (Rosenau 1995a). Holmes gives an insight into the logical response of Realists to these new threats and turbulent times:

> To be prepared to fight and win our nation's wars, to be capable of a range of challenging contingency operations and to be ready to assist our friends and allies in the Third World in establishing a secure, stable environment, we must continuously develop new tactics and equipment that address the new age warfare we will face in the 20th century (Holmes 1997: 6)

The most important critique of expanded conceptions of security, of which environmental considerations are part, concerns this militarised response. Security, as Deudney (1990) and Dalby (1991, 1994b) note, carries with it an array of sentiments and a narrow problem-solving mindset that possibly (Dalby), or does (Deudney), make it an inappropriate concept for addressing these issues. These critiques speak to the prevailing Realist conception of security which is, in Dalby's words, "mired in ideological straightjackets" (1991: 29). So the Western response to the current era of world politics is "characterised by the representation of novel challenges in terms of traditional analytics, and the varied attempts to replace one enemy with (an)other" (Campbell 1992: 8). This holds true for environmental security as well:

> In thinking about the new horse of environmental degradation, it is really the old gibbons heart of national security that many of the new securitarians want to preserve. They alter, dilute, and extend the meaning of security beyond any classical recognition, but they never give up on its original idea which embodies conflict and violence. This is because the idea carries them to the heart of existential anguish and moral peril, fears without which their message would not merit such an anxious hearing by politicians, the military, or the mass media (Smil 1997: 108).

Therefore, this post-cold war security agenda is still basically the Realist agenda, but now exhibiting previously secondary concerns brought forth with the sudden absence of the mobilising West-East threat. Sorenson (1990) seems to admit that strategic studies has sought for new security issues to fill the strategic vacuum left after the collapse of the cold war: "the search for a new national security focus has begun" (Sorenson 1990: 1). Thus the hidden goal of security - that of maintaining

power within the state - remains unchallenged so long as security is projected as an absolute imperative. In short, the effect of broadening national security to include social, political and environmental issues - without changing the referent away from the nation-state - is the further colonisation of domestic society by Realism's ultimately violent logic.

In as much as the Realist conception of security dominates, this thesis is in agreement with Campbell, Dalby and Deudney. For as long as security remains tied up in the state-centric Realist paradigm, introducing new issues will be conceptually counterintuitive and practically counterproductive to these issues, and to peace. In most of the accounts discussed in this chapter, the logical confines of Realism are not broken, and the state remains *the site* of politics, hence:

> Broadening the *issue*-agenda of security studies from the military-strategic dimension does not necessarily involve broadening the *conceptual* base. The recognition of additional dimensions of security - however welcome this may be - may be an *ad hoc* enlargement of a still state-centred concept of security (Shaw 1993: 162).

Therefore, expanding the security agenda without seriously contesting the meaning of security perpetuates Realism's failure to take into account the needs of people. In this broader (but not deeper) agenda, security is still the preserve of states acting in their own interests - interests which for the most part do not correspond to the needs of people.

However, the expansion of the concept of security is only malignant for as long as security equates with national security as constructed by Realism. There are a range of other definitions of security that identify alternative referents (chapters 9 and 10). These do more than expand the meaning of security, they seek to 'reclaim' it by deepening the concept such that it speaks to the security needs of people (not nations), and by addressing risk and uncertainty in proactive and peaceful ways (Barnett 1997b). Even given these radical approaches, it remains an open and ongoing question as to whether the notion of security is too thoroughly contaminated with associations of power and violence to warrant further use. This issue is taken up again in chapter 10 where the advantages and disadvantages of securitising environmental problems are considered.

5.6 Conclusions

The attempts to redefine security discussed in this chapter do so in contradistinction to the dominance of the military emphasis and national focus. As Waever puts it "to the extent that we have an idea of a specific modality labelled 'security' it is *because* we think of national security and its modifications and limitations" (1995: 48). If, as Waever suggests, security only has meaning because of its close association with the nation, then all of the environmental security literature that speaks directly to, or explicitly against national security, is still nevertheless taking in terms of the *nation-state*.

Where the stated referent is still the nation-state, most efforts at redefining security serve the interests of the national and security elite rather more than they serve the interests of people. So, in this thesis' view, despite good intentions, the search for 'new security issues' has lead to the discursive reinvigoration of the state and its self appointed protectors via the continued construction of Others and discourses of danger. In this context it is not surprising that we read that "environmental degradation is becoming (along with extreme nationalism, religious radicalism, and economic conflict) a prime threat for the 21st century" (Winnefeld and Morris 1994: 2). The beginning of this discourse of environment as a threat can be largely attributed to Ullman and Myers, who presented environmental insecurity in terms of conflict and national threats. This issue of conflict and the environment will be discussed in the following chapter.

Chapter 6. Environmental Degradation and Conflict

6.1 Introduction

The previous chapter raised the idea that environmental degradation might lead to conflict. In the 1990s this notion has become the dominant theme of the environmental security literature; few articles do not mention it, and the majority of the literature focuses exclusively on it. According to Dabelko and Simmons:

> Relative to other conceptions of environment and security, the academic literature on environment and conflict linkages is arguably the most developed. It has also received the most sustained attention from policymakers and a broader groups of scholars, perhaps because it fits easily into predominant state-centered views of security (Dabelko and Simmons 1997: 135).

This dominance makes it crucial that this literature be subjected to critical examination. Such an examination is rare, and rarely detailed, so the following discussion seeks to make a significant contribution to the literature.[1] This chapter begins with an examination of the idea that there will be 'water wars' in the future. Then it examines arguments that there will be wars fought over scarce resources, and that population growth may induce conflict. There is also a critical examination of one significant research program - the Project on Environment, Population and Security - which sought to identify the possible connections between environmental degradation and conflict. Attention is also paid to Kaplan's influential *Coming Anarchy* paper (1994) - an extreme example of the argument that environmental degradation will induce conflict and instability. The chapter ends with some critical comments on this literature.

6.2 Water Wars

A major concern of the environmental security literature is the likelihood of conflict over water.[2] According to Starr, for example, "water security will soon

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[1] Elliott (1996) and Gleditsch (1998) make sceptical, if not critical examinations.

[2] A selection includes: Bennett (1991), Cooley (1984), Falkenmark (1986), Frederick (1996), Gleik (1990, 1991, 1993), Holst (1989), Lowi (1996), Myers (1986, 1987a, 1987b, 1989, 1996), Naff (1992), Oswald (1993), Porter and Brown (1991), Renner (1997), Starr (1991), Stoett (1995), Tickell (1993). Water is an interesting phenomena for the study of the linkages between environment and conflict (and peace) because it directly serves economic, health and ecological functions (Falkenmark 1986). It is thus a multifaceted resource.

rank with military security in the war rooms of defense ministries" (1991: 19); and for Buzan "it is not difficult to imagine the issue of allocations of water along rivers such as the Nile, the Mekong and the Indus becoming causes for the use of military force" (Buzan 1991a: 132). The literature makes much of the observation that 214 major river systems are shared by two or more countries (Renner 1997). Naff exemplifies the reasoning that underlies the water wars thesis:

> In sum, the strategic reality of water is that under circumstances of scarcity, it becomes a highly symbolic, contagious, aggregated, intense, salient, complicated, zero-sum, power- and prestige-packed issue, highly prone to conflict and extremely difficult to resolve. (Naff 1992: 25-26).

There is a typical pattern to this literature; the geographical misfit between water and national boundaries is explored, and then a healthy dose of practical geopolitical reasoning is applied. The usual case in point is the Middle East, a region already suffering from religious, ethnic and political tensions. For many authors, when they factor in water scarcity it becomes the proverbial spark that starts the metaphorical Middle East bonfire, which in turn is seen to threaten 'international security' (Gleik 1993). Having made much of the prospect of water wars, there is usually a brief discussion of remedial measures which reads more like an afterthought or an addendum to the substantive issue of warfare.

Bulloch and Darwish (1993) provide the most comprehensive study of the likelihood of war over water in the Middle East. The title of their book - *Water Wars: Coming Conflict in the Middle East* - neatly encapsulates its tone. The final chapter is titled 'The Dangerous Future', and the final paragraph says:

> Rising populations and dwindling resources combine to make the Middle East the most vulnerable of all regions to water shortages. As we have shown, wars have already been fought to ensure adequate supplies, and the politicians have made it plain that they would be ready to use military means again to protect their interests, while army commanders have devoted thought and effort to ensuring that the orders of the politicians, if they come, can be carried out. .... The potential for violence is always present in the Middle East. .... Although the battles may be about land, or autonomy, or human rights , or protecting borders, every confrontation in the future will be affected by the hydrography of the region. Water wars are on the way (Bulloch and Darwish 1993: 199).

This passage highlights the difficult, perhaps irresolvable question, of which factors contribute most to warfare. Contrary to discussions about the 1948 Arab-Israeli war for example, it seems that few wars have been induced singly by water shortages. Lowi (1996) is more forthright than most, arguing that the broader political context is more relevant than the specific issue of water scarcity. This is a

point of concern for Lipschutz as well: "the evidence for true 'water wars' is problematic .... those examples offered as evidence of wars over water tend, under closer inspection, to be about something else" (Lipschutz 1992b: 4-5). Nevertheless, there appears to be sufficient evidence - particularly that provided by Kelly and Homer-Dixon (1996) and Percival and Homer-Dixon (1995a) - that water is an important variable in violent conflict within, if not always between states. Further, with respect to the case of interstate conflict in the Middle East, pronouncements by the region's politicians (see below) suggest that in as much as politicians identify water as a cause of violence, the prospect of water wars should be taken seriously. Nevertheless, it is the contention of this thesis that the argument about water wars is overstated, is a particular product of Realist security reasoning, and undervalues the historical and contemporary evidence that water is as likely to "cement peace" as it is to induce violence (Cooley 1984: 3).

Authors concerned about water wars have made much of (then Egyptian Foreign Minister) Boutrous-Ghali's observation that "the next war in our region will be over the waters of the Nile, not politics" (cited in Gleik 1991: 20). However, if Clausewitz's dictum that 'war is the continuation of politics by other means' is still relevant, then war over the waters of the Nile is still a war about *politics*. Put another way, if there is conflict over water, then that conflict is the result of a *failure of politics* to negotiate a settlement over the shared use of water. As Holst puts it: "it is a question of political organisation, of the carrying capacity of political systems.." (1989: 128). So, the popular idea that a war over water, or any other resource, is not a war about politics is dubious. Politicians and the military might wish to present war in Darwinian or Malthusian terms as a fight over subsistence needs, but this 'state of nature' rhetoric is a pragmatic device that denies responsibility for peaceful action, and justifies violence in lieu of meaningful dialogue.

That much of the water wars literature focuses on the Middle East is instructive.[3] It suggests that the issue is important not because of an *a priori* concern for those people who may suffer from warfare (if it was we might see more discussion of the everyday problems of water scarcity as well), but because of the problems war in the Middle East might create for Northern interests in the region. The Middle East is certainly vulnerable to water shortages, but Central and

[3] It is interesting to note that predictions of water wars come mostly from Northern commentators.

Southern Africa have similar, if not worse, water scarcities and hydrological perturbations. There are also equally long standing political and social tensions. Yet there is no superpower presence in Africa, no supposed religious threats to world order, and perhaps most importantly, there is no media interest. The Middle East, in contrast, is a zone of importance to Northern strategic interests and is prominent in the Northern political agenda, hence the focus of attention there. So, it seems that the discourse on water wars in the Middle East is motivated by Northern interests in the region rather than by a concern for the people of the region.

Should there be examination of water issues in Southern Africa, a picture which confounds the water wars thesis might emerge. The Okavango River, for example, is a little studied but exemplary case of the way in which water scarcity can lead to cooperation rather than war. The Okavango River is shared by Angola, Botswana and Namibia, and has important health, economic and ecological functions. As a result of impending tensions over scarce water resources, an interstate commission was established by these three states in 1994. Since then, the commission has effectively and peacefully co-managed the river, demonstrating that water can form a common basis for peace (OKACOM 1998).[4]

So, the selection of cases to prove the water wars thesis is suspect. What is truly notable is the failure to examine successful and peaceful water management regimes, such as those in Western Europe and North America. This omission might be explained by an absence of scarcity, or the relative balance of military powers, although this is not the case with U.S.-Mexico cooperation over the waters of the Colorado River. The failure to examine positive cases might also be a function of the way in which warfare appeals to our sensationalist and militaristic culture, which helps authors with publication and career advancement.

The water wars literature can be read as a case of 'civilised' Europeans constructing a barbaric Other. It suggests that there is really a pervasive disinterest in peace, and that warfare is more exciting. The overwhelming preference for discussing conflict rather than peace suggests that the limiting Realist ontology belies this literature.

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[4] 'Peacefully' only in so far as *interstate* violence has been averted. There are a range of development projects being planned, the effects of these on local people could yet be violent. The International Rivers Network has documented the resistance to the Epupa Dam project in Namibia See http://www.irn.org/index.html

A counterargument to the prospect of water wars has come from Deudney (1990, 1991, 1992). Deudney supports the view that cooperation and co-management of water resources may be the more likely outcome of water scarcity. This suggestion is supported by strategic considerations as well, namely that:

> Exploitation of water resources typically requires expensive - and vulnerable - civil engineering systems such as dams and pipelines. Large dams, like nuclear power plants, are potential weapons in the hands of an enemy. This creates a mutual hostage situation which greatly reduces the incentives for states to employ violence to resolve conflict (Deudney 1991: 26).

In short, water is not likely to be a source of conflict because it is difficult to securely enclose; it is "a 'fugitive' resource - naturally flowing from one location and one state (liquid, gas, or solid) to another" (Frederick 1996: 9).

Historically, water has for the most part been peacefully co-managed. Water rights have always been central to coping with water scarcity: "water rights are as old as the first Neolithic farmers" (Bennett and Dahlberg 1990: 75). This is also true in the case of the Middle East, where there has been a complex system of water rights, and where water was an integral part of traditional customs (see Isaac and Shuval 1992). Prior to the modern state then, water was a basis for negotiation and cooperation, which suggests that despite the impediments imposed by the state-system, the peaceful resolution of water disputes is still (at least culturally) possible.

6.3 Resource Wars

The issue of 'resource wars' is a traditional concern of International Relations. This concern is prevalent in the environmental security literature (Elliott 1998). For example, for Gleik "a strong argument can be made linking certain resource and environmental problems with prospects for war or peace. There is a long history suggesting that access to resources is a proximate cause of war" (1990: 507). A difficulty with this literature is the conflation of *resources* with *environment*. Gleditsch identifies this difficulty as well, asking if the literature is talking of "resource scarcity or environmental degradation?" (Gleditsch 1998: 387).

With respect to the question of resource scarcity and war, the literature is by and large concerned with *resources of economic value*, rather than the

environment *per se*.[5] For example, Magno (1997) considers the case of resource scarcity in the South China sea, arguing that it "fits well within the framework of environmental security ... The expansion of economic activity, mixed with the depletion of natural resources in the region, has intensified the scramble for resources.." (1997: 100). Magno's work reflects the traditional Realist concern with war over *resources*, the environmental dimensions are not particularly evident. Mandel (1994) explicitly conflates resources with environment. He has a chapter titled 'Resource/Environmental Security', and in a revealing passage he says that "analyzing the link between resource/environmental concerns and national security without a foundation in the substantial geopolitical literature would be foolhardy" (Mandel 1994: 77). Thus, for Mandel, like many others, resource and environmental security are related, they are of interest only in as much as they relate to national security, and the key to understanding them lies in the study of Realism's traditional geopolitical texts.

At times 'resources' is used to describe environmental services in a way that, although not altogether wrong, can be misleading. The confusion is perhaps most clear in Gleik's work (1990, 1991). Gleik argues that there are 'clear connections' between environment and security (my emphasis in italics):

> *Resource* and environmental threats to security can be separated into five components: *resources* as strategic goals, *resources* as strategic targets; *resources* as strategic tools; *resource* inequities as roots to conflict; and environmental services and conditions as roots to conflict (Gleik 1990: 508).

Of these five components, only one speaks directly to environmental issues. The first four are speaking of *resources* as *strategic* goals, targets, tools and sources of conflict.[6] This conflation of resource scarcities with environmental issues gives Realist modes of analysis a foothold in the environmental security literature because resources and conflict are part of the Realist stock-and-trade. The notion that there has to be a 'resource' factor for it to be considered as a security issue is a stale reflection of Realism.

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[5] With respect to the question of scarcity it should be noted that scarcity is a relative phenomena. The problem of scarcity is in most cases the problem that comes from "the expectation of abundance" which is "denied for structural economic reasons rather than natural ones" (Bookchin 1982: 71).

[6] Gleik is not unlike Myers in that his work is more benign when not sensationalising the security dimension, see for example Gleik 1994. The question to be asked is why both of these (basically) credible scientists choose to engage in dramatic politics. The answer perhaps lies less in 'securitising' environmental issues, and more in the personal aggrandisement that comes from talking tough about high politics.

It behoves this thesis, then, to make the distinction between resource scarcity and environmental disturbance clearer. To begin, remember Julian Simon's argument (chapter 1) that there is no environmental problem because economic processes can account for scarcity through price mechanisms and substitution (Simon 1981, Simon and Kahn 1984). Hence the dismissal in chapter 1 of resource scarcity as the most pressing environmental problem. Next, it is instructive to examine the definition of a 'resource'. A resource is:

> [S]omething material or abstract that can be used to satisfy some human want or deficiency, ie. by definition the existence of a resource depends on it value to humans. What makes a thing a resource is not its intrinsically valuable properties but the fact that a given society expresses a desire for it and is willing to pay for it. Resources are therefore a cultural concept... (Goodall 1987: 409).

The very word *resource* is a clear indicator that what is being discussed is something of direct utilitarian value to humans. If a scarce resource can be costed, its price altered according to the balance of supply and demand, and if necessary substituted, then it's scarcity is an *economic* rather than an *environmental* problem. Environmental problems are understood in this thesis to be those effects or externalities that cannot be costed or reasonably substituted. That economic rationality discounts these externalities is integral to the problem; if they were calculable then we might assume that they could be redeemable through market processes. But increasing rates of cancer, biodiversity losses, and the effects of climate change, for example, defy simplistic estimation. These are issues characterised by pervasive uncertainty and ignorance, and the word 'resource' seems an inappropriate label for these problems. These issues are already discernible in declining human security, felt mostly by the already insecure. These are what is new about environmental insecurity.[7] If consider that the causes and effects of environmental insecurity are felt differentially, that is if we consider the element of injustice, then these problems acquire a further resistance to calculation; the market has never been able to put a price on justice.

Therefore, if a scarce resource is one which has an immediately calculable economic value, it should not be considered as an environmental security issue. If, however, the problem arises from an ecological disturbance whose effects defy economic calculation, then it could be considered as an environmental security

[7] Porter (1996a) therefore misses the point altogether when suggesting that environmental threats to national security can be costed.

issue.[8] This explication should serve as an approximate guide to considering the question of which issues might be considered under the ambit of environmental security. Exceptions to this rule will no doubt abound, but it is hoped that the distinction is by now reasonably apparent.[9]

The prospect of war over resources is dubious even without considering environmental factors. Lipschutz and Holdren (1990) have suggested that military action to secure access to resources is not likely given interdependence among states in the global economy. They argue that war is less cost effective than pursuing the same goal through trade; that technological advances have increased the substitutability of materials; and that raw materials are now less important to economic success.[10] Deudney supports this view, arguing that the "robust character of the world trade system means that resource dependency is no longer a major threat to a nation's military security" (Deudney 1991: 26).[11] But at the same time as dismissing the possibility of war over economic resources, Lipschutz and Holdren predict that environmental problems now pose "the greatest threats to international stability" (1990: 126). They argue that if we consider:

> The potential for drastically increased levels of deprivation in the South caused by global biogeophysical change, as well as the likelihood that the pre-eminent role of the North in generating these problems will, even more than usual, incline the South to blame the North for its predicament - ... the threat to peace should be fully apparent (Lipschutz and Holdren 1990: 129).

Lipschutz and Holdren are, in this thesis' view, correct to point out that the North is the generator of most environmental problems, and that there are indeed great discrepancies between North and South. Further, they do make some effort to distinguish between resource and environmental issues. But their argument about environmentally induced conflicts is premised on consideration of the same inequalities and disparities between states that they deem of no significance for conflict over economic resources. So, if the oppressed and exploited South has not resorted to force thus far as a means to free themselves from the North, it seems

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[8] Of course contingent valuation seeks to ascribe a monetary value to environmental functions. It is, on the balance of evidence, an economically and ethically inadequate procedure. See Common 1995, and for the author's own foray see Barnett 1996a.

[9] Energy resources, for example, are, as a cause of conflict, an economic resource - as in the case of the Persian Gulf War or Magno's discussion of the Spratley Islands. However, when oil, coal and to a lesser extent natural gas resources are burned to generate power, the resulting effects can be considered to be environmental problems. The link between these latter effects and violent conflict, however, are less than clear (see Holdren 1992).

[10] Opschoor (1989) makes the important point that trade is another means by which wealth is transferred, and so does not imply mutual benefit and resolution of injustices.

[11] However, this liberal-internationalist type of argument holds more for interactions between industrialised states than for the whole global economy (see Burchill 1996b).

questionable to assume that they will in the future on the basis of additional environmental pressures. In short, if the argument that interdependence is peace promoting holds for resource based conflicts, then it should hold equally for environmentally based conflicts.

The ontological priority given to conflict over cooperation therefore seems to prevail even in more reasoned works such as Lipschutz and Holdren's. A particular Northern world view of the South as barbaric is discernible. There is apparently:

> Superabundant indigenous sources of tension - a rich array of religious and racial hatreds, ideological incompatibilities, and territorial disputes, compounded by the frustrations of poverty, the frictions of modernization and development, and, in many cases, the birth traumas of new statehood. (Lipschutz and Holdren 1990: 129)

That this was written before the disintegration of Yugoslavia should be noted, however, the Yugoslavia case reveals that Europeans are no less prone to 'racial hatreds, ideological incompatibilities' and so on. The revealing question, therefore, is why is Yugoslavia the exception for the North, but assumed to be the norm for the South? To this we might provide three immediate responses. First, common to much of the environmental security literature is the scripting of people from the South as barbaric. Second, and related, there is an ethnocentric assumption that the North is more civilised. Third, there may indeed be a degree of institutional/social resilience in industrialised societies that hedges against large scale violence most of the time. Hence Lipschutz suggest that "if the capabilities of a state are broad and deep enough, and it is technologically advanced, marginal changes in resource quality will not make much difference" (Lipschutz 1992b: 3). Of these three explanations, only the latter offers hope as a meaningful research agenda for environmental security. Thus Conca has suggested that "a lot of good work on management of environmental cooperation and institution building is being done, but that work is often separate from environment and conflict discussions and needs to be incorporated" (1995a: 63).

There are at least three reasons for the resilience of industrialised societies. First, as the industrialised economies partake of the global division of labour they effect a global division of environmental degradation as well, thereby preventing environmental degradation at home.[12] Given this, practicing environmental

[12] Hence "the question of the location of environmentally benign societies is in part a convenience of territorial state boundaries and the assumptions of states as containers of politics and environments" (Dalby 1998c: 4).

security seems to be the practice of securing the ecological health of the nation (but not the biosphere) by transferring environmental externalities. Second, the levels of wealth in the industrialised world - wealth gained through the exploitation of cheap labour and materials abroad - allows for institutions that provide stability and resilience to environmental change. The market, well financed government, the insurance industry, transport and communications infrastructure, a degree of democratic participation, and a base level of personal affluence all seem to help hedge against internal turmoil in the face of environmental stress. Third, trade between similarly affluent liberal-democracies assists in the transfer of necessary food and technology that helps enhance resilience and decreases the likelihood of rivalry. Underwriting all this, however, is the ability to pay and to participate in the domestic and global economy without great disadvantage. This ability, of course, is limited to the few and underwritten by the exploitation of the many.

This brings us to a pervasive analytical difficulty of the literature which posits the possibility of environmentally induced conflicts. If, as Gleik suggests, "developing countries have far fewer technical and economic resources at their disposal", and hence are less able to adapt to environmental change, then this institutional impoverishment surely applies to their ability to wage war as well (Gleik 1990: 518). The threat from the South could scarcely manifest itself as large scale warfare, despite Gleik's observation that "Third World arms capabilities are impressive and growing" and so "the threat to peace and security becomes fully apparent" (1990: 519). There may indeed be some possibility of 'low-intensity conflict' driven by desperation and resentment of the policies and practices of the North, but it is important to step back and view the broader picture. Once again we should ask *whose peace and security*? The absolute peace and security problem is not that in the face of intolerable oppression the oppressed may resist; the problem is the oppression and injustice itself. The task, then, is to eliminate this injustice.

The real irony of the environment-conflict literature is that it is the industrialised world which assumes that the South will threaten; the North creates its own fiction, based on little or no evidence. In this literature the Northern strategic vision projects onto the industrialising world its own violent rationality. It assumes that the South will behave as the North would - that is with aggression and force. Yet this is merely *an assumption*, there may be rogue states (Iraq,

Libya, North Korea), but these few are exceptions and do not represent the vast majority of industrialising states. Hence the 'threat to peace and security' which is 'fully apparent' to Gleik is by no means apparent. The peace and security being referred to, then, is the peace and security of the industrialised states, not the positive peace and security to which the majority of the world's people are entitled. This Northern 'peace' is a negative peace, and its 'security' is a resistance to change.

6.4 Population, Environment and Conflict

It is common in the environmental security literature to assume that excess population can cause warfare. A large amount of attention has been paid to the links between 'population, environment and conflict' (Myers 1987b). The standard line here is that population growth will overextend the natural resources of the immediate environs, leading to deprivation which, it is assumed, will lead to conflict and instability either directly, or through the flow of 'environmental refugees' (Lee 1994). Myers puts it thus:

> So great are the stresses generated by too many people making too many demands on their natural-resource stocks and their institutional support systems, that the pressures often create first-rate breeding grounds for conflict (Myers 1987b: 16).[13]

The ways in which population growth leads to environmental degradation are reasonably well known. However, the particular ways in which this leads to conflict are difficult to prove (Leroy 1986). In lieu of this, there is a negative style of argumentation, and there are blanket assertions and abrogations; for example: "the relationship is rarely causative in a direct fashion", but "we may surmise that conflict would not arise so readily, nor would it prove so acute, if the associated factor of population growth were occurring at a more manageable rate" (Myers 1987b: 16). It is possible though, that rather than inducing warfare, overpopulation and famine reduce the capacity of a people to wage war; as Deudney notes, full bellies, not empty ones, are more predisposed to warfare (Deudney 1991). Indeed, the famines in Africa in recent decades hardly seem to have produced 'first rate breeding grounds for conflict'. Rather, the overwhelming outcomes are malnutrition and large losses of life.

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[13] As Stoett notes "Myers knows one sells products by appealing to insecurities" (Myers is a consultant) (Stoett 1994: 134).

To equate famine with warfare and threat is to deny the *prima facie* issue of the responsibility of the industrialised world to those in affected regions.[14] To focus on the conflict potential is to ignore the real causes of poverty and vulnerability, namely the economic disadvantages many people in the industrialising world experience from their exposure to global capital. Ignoring global processes also leads to impoverished policy.[15] Vulnerability to famine can be lessened through substantial increases in access to employment, health care, education for women and children, and contraception. Resilience to famine can be enhanced by protecting traditional societies from the disruptive effects of modern society, by creating safe political conditions, and by permitting more autonomous governance at the local level. The consequences of famine can be lessened by making use of the efficient collection and delivery mechanisms that characterise world trade between industrialised nations to deliver necessary supplies. All these concerns are ignored or treated as afterthoughts when the issue of population growth is understood as a probable cause of violent conflict.

This population-environment-conflict reasoning is captured in an early pronouncement by Robert MacNamara (former U.S. Secretary of Defense and President of the World Bank), who said in 1984 that: "short of thermonuclear war itself, population growth is the gravest issue the world faces over the decades immediately ahead" (cited in Myers 1987b: 15). We should be immediately suspicious when pronouncements likening population growth to nuclear war come from key figures in the Northern world order such as MacNamara; whose 'world' is MacNamara referring to? If MacNamara the philanthropist is talking here about the plight of those who are adversely affected by rapid population growth and famine, then the 'world' in question may be that of the Southern people at the receiving end of the exploitative, poverty-making global economy. This 'world' is at risk from those very institutions with which MacNamara is so familiar - the World Bank, the Pentagon, and Ford motor company. More probably, MacNamara the former defense secretary is referring to the world of U.S. interests and the possibility that the growth in the number of Others might undermine the stability of (Northern) world order; as Dalby (1998b) and Shiva (1993) both note, claims to the 'global' often turn out to be a disguise for the interests of the industrialised world. Thus:

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[14] To be sure, some industrialised countries are more responsible than others, see the military/development assistance ratios in chapter 1.

[15] Engelman (1997) and Gelbard (1996) offer a more reasoned approach to policy for population and environmental security.

> The word 'global' is a mirage. It turns out to be the illusion created by the traditional agents and major stakeholders in order to maintain their privileges and to avoid questioning the fact that their traditional problem-solving mechanisms are bankrupt" (Chaterjee and Finger 1994: 173).

For Conca, too, claims that environmental issues are global "serves to blur the very real questions of power and authority, and to mask highly unequal degrees of responsibility for current environmental problems" (Conca 1994a: 15). So, it seems that the 'world' view of MacNamara is the view that comes with a position of power; the view that comes from directing aircraft carriers and satellites, and from granting billion dollar loans and shaping national economies to fit the global economy. The 'world' in question seems to be the world of the wealthy and powerful.

There are three principal problems associated with this population-environment-conflict literature. First, by scripting population growth in industrialising countries as a threat to the interests of the industrialised countries, it presents population growth as an issue which requires management by the industrial powers. However, this is rarely seen to involve the relinquishment or adjustment of economic power. Second, it assumes that the number of people is absolutely indicative of ecological impact. This totally ignores the question of what kinds of lifestyle these people lead. A basic environmental studies text such as Miller (1994) demonstrates clearly that overall environmental impact is not merely a function of numbers, but also a function of the resources people use and the wastes they generate. This has been recognised by none other than U.S. President Bill Clinton, who is reported to have said that the greatest threat China poses to U.S. security is the potential for all Chinese people to acquire wealth and display consumption patterns similar to that of U.S. citizens. Clinton is alleged to have said that "unless we try to triple the automobile mileage and to reduce greenhouse gas emissions ... we won't be breathing very well", and that this "will be partly our fault, because we got there first and we should be able to figure out how to help .. solve this problem" (Friedman 1996).[16] As well as suggesting that the U.S. President is more attuned to population-environment issues than many analysts, this also indicates the central point that *lifestyle* is as important as the *number* of lives. In this respect the most overpopulated country in the world is the United States, which has 4.7% of the world's population, consumes 25% of all processed minerals, and produces 24% of the world's greenhouse gases (UNDP

[16] This was relayed to me via the environment and security mailing list <<envsec_d@aaas.org>> operated by the American Academy for the Arts and Sciences

1996, Miller 1994). In contrast, an 'overpopulated' country like India has 16% of the world's population, but consumes only 3% of all minerals and produces around 4% of greenhouse gases (Miller 1994). Hence overemphasising population turns a blind eye to the complicity of industrialised nations.

The third problematic feature of this literature is the way it totally ignores and completely devalues the whole notion of birth, and indeed life. By viewing population as a threat, by indicating this threat through impersonal demographic statistics, and by seeing this from a global perspective and in Malthusian terms, this literature ignores the social and biological aspects of birth.[17] For the population doomsayers another birth is a negative incremental addition to the problem. Further, the life that comes from birth is seen to be miserable and burdensome. Yet high population growth in the industrialising world is generated in part by the realisation on the part of parents that prospects for survival are increased by having children (Wrong 1977). To be sure, other factors such as the exclusion of women from public life, inadequate maternal and post-natal medical care, unavailability of birth control devices and religious and cultural factors all play a part as well. However what is surely of some significance is that having children is both socially rewarding and is basic biological behaviour. Having children is one thing that people have always done. Giving birth and raising children points to non-instrumental modes of reason and ethics which involve a respect for life and community, nurturing, love, responsibility and a long term focus on the future. These positive aspects of population growth are wholly ignored by this population-environment-conflict literature.

6.5 The Project on Environment, Population and Security

Of all the literature that addresses the links between environmental degradation, population and conflict, the work by the Project on Environment, Population and Security is the most engaging and thoughtful.[18] Blanket assumptions and simplistic connections are less obvious here, the sorts of biophysical processes that are considered are generally of a more ecological nature, and considerably more

[17] Malthus' essay can be found in Nelissen et al (1997). See Dalby (1996b) for a discussion of the way Malthusian principles underwrite much of the environmental security literature.
[18] Homer-Dixon founded the project, and is principal or co-author of virtually every publication.

effort is spent to explain the processes by which environmental disturbances might lead to conflict.[19]

The project began in 1994 and aimed to answer three questions, namely: what is known about the links among population growth, renewable resource scarcities, migration and conflict?; what can be known about these links?; and what are the critical methodological issues affecting research on these links? These questions can be understood as seeking to substantiate what this thesis has thus far called the *assumption* that environmental disturbances will induce conflict.

The project was based on an early paper by Homer-Dixon (1991).[20] The key premises of this are worth citing at length:

> I propose that poor countries will in general be more vulnerable to environmental change than rich ones; therefore, environmentally induced conflicts are more likely to arise first in the developing world. In these countries, a range of atmospheric, terrestrial, and aquatic environmental pressures will in time probably produce, either singly or in combination, four main, causally interrelated social effects: reduced agricultural production, economic decline, population displacement, and disruption of regular and legitimized social relations. These social effects, in turn, may cause several specific types of acute conflict, including scarcity disputes between countries, clashes between ethnic groups, and civil strife and insurgency, each with potentially serious repercussions for the security interests of the developed world (Homer-Dixon 1991: 78).

The logic here is of the positivist kind. Homer-Dixon developed a number flow charts to explain the processes whereby the 'more likely' and the 'may cause' are explicated (see also Homer-Dixon 1992 and 1995). These flow charts are models which depict a hypothetical 'reality'.[21] Smil seems to have Homer-Dixon's models in mind when he says that:

> Many natural scientists must be amused, if not appalled, by the often crass environmental determinism of the securitarians (eroding slopelands = environmental refugees = overcrowded cities = political instability = violence; or water scarcity = civil or interstate war) (Smil 1997: 109).

Environmental determinism indeed seems an appropriate label for the positivist and linear style of analysis Homer-Dixon and other such as Gleik and Myers use.

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[19] A similar project was undertaken by a Swiss research project (ENCOP 1996). RAND has also made a foray into the field (Winnefeld and Morris 1994).

[20] The analysis was convincing enough that Scientific American ran a similar piece in 1993 (Homer-Dixon et al 1993).

[21] A similar strategy is deployed in hazards research, about which Hewitt says: "thus encapsulated, the problem appears neutralised, objectified .... The work can then develop as a *well crafted* monologue" (Hewitt 1983: 14).

Despite such concerns, the popularity of this research no doubt stems from this pseudo scientific approach.

The subsequent research programme that emanated from this early paper continued these positivist overtones. A large number of principal case studies were used to shed light on the three basic research questions. These cases were: the Asia-Pacific (Howard 1996), Bangladesh-India (Homer-Dixon and Percival 1996), Chiapas in Mexico (Howard and Homer-Dixon 1995), Gaza (Kelly and Homer-Dixon 1996), Pakistan (Gizewski and Homer-Dixon 1996), Senegal-Mauritania (Homer-Dixon and Percival 1996), post-apartheid South Africa (Percival and Homer-Dixon 1995a), and Rwanda (Percival and Homer-Dixon 1995b). There was also investigation of the links between urban growth and violence (Gizewski and Homer-Dixon 1995), and some discussion of institutional adaptation and technological innovation (Barbier and Homer-Dixon 1996). These case studies are, to varying degrees, well researched background briefings on the difficulties experienced in particular regions; although they are more like development case studies than issues for "students of security affairs" (Homer-Dixon 1991: 79).

What these case studies demonstrate is that inequitable distributions of renewable resources are exacerbated in times of scarcity, and in such times elites may try to capture resources to secure their interests.[22] This in turn leads to population displacement, often forcing people into more environmentally fragile areas, where the cycle may begin anew. The initial problem of environmental scarcity thus creates a cycle of enclosure, capture and displacement, and in such a cycle the potential for violent episodes increases. The first of ten key findings is that:

> Under certain circumstances, scarcities of renewable resources, such as cropland, forests, and water produce civil conflict and instability. However, the role of the "environmental scarcity" is often obscure. Environmental scarcity acts mainly by generating social effects, such as poverty and migrations, that analysts often interpret as conflict's immediate causes (Homer-Dixon and Percival 1996: 6).

In Homer-Dixon's view then, environmental disruptions are not immediate causes of conflict, but can at times be contributing factors. The logic of this conclusion is very similar to that of Homer-Dixon's early prognostications (1991 cited above), so it would seem that the research project has largely confirmed the initial

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[22] This analysis has largely avoided the aforementioned confusion over resources by talking about *renewable environmental resources* (although the word 'resource' may be inappropriate).

assumption that there is some connection between environmental degradation and social unrest.

Other key findings are that societies adapt by either using their environmental resources more efficiently, or by reducing their dependence on the scarce environmental resources, and that "in either case, the capacity to adapt depends on the level of social and technical ingenuity available in the society" (Homer-Dixon and Percival 1996: 7). Homer-Dixon finds that failure to adapt results in impoverishment, migration, and weakening of the state, and that this may "sharpen distinctions among groups and enhances their opportunities to participate in violent collective action" (Homer-Dixon and Percival 1996: 8-9). Finally, and contrary to the allegations of others, the project found that "environmental scarcity rarely contributes directly to interstate conflict" (Homer-Dixon and Percival 1996: 9).

In terms of the broader literature it is important to note that this research has shifted attention away from global and regional issues to local issues. It offers a scale of analysis which was previously ignored by environment and security scholarship, but which is surely equally valid. It is also significant in that it dismisses the suggestion that environmental degradation will lead to conflict between states. To stress the key point, however, this research has not conclusively shown that conflict inevitably flows from environmental degradation, nor even that environmental degradation is a principle cause of violence. What it has shown is that environmental problems are contributing to social disturbances, which may involve violence, or less sensationally but no less importantly, more structural forms of disadvantage.

One of the 'debates' about environmental security concerns Levy's criticisms of Homer-Dixon's research.[23] Levy is generally dismissive of all the environment and security literature, although his review of it is far from comprehensive (Levy 1995a, 1995b).[24] He is particularly ungenerous in his regard for Homer-Dixon's work, arguing that it is 'bland' and offers nothing substantially new to security studies - although we should note that Homer-Dixon for the most

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[23] This core of this debate can be seen in the 1996 *Environmental Change and Security Project Report* (Simmons 1996). Porter (1996b) and Goldstone (1996a) make some interesting observations about this debate.

[24] Levy ignores much of what this thesis calls the military-environment, human, and ecological security literature; he also offers a simplified account of the 'securitisation' issue

part was not talking about 'security' per se, focusing instead on violence.[25] Levy is also overly concerned with the failure of Homer-Dixon's research to suggest implications for "contemporary U.S. security policy", another aspect that Homer-Dixon did not purport to address (Levy 1995a: 55).

Levy argues that Homer-Dixon's research has "serious methodological flaws", the most pressing of which (for him) is the need to explore "causes of regional conflict as an important end in itself" (1995b: 44). This seems to be less a critique of methodology and more a confusion of method with scale. Levy suggests that "the logical strategy .. would have been to compare societies facing similar environmental problems but exhibiting different levels of violent conflict" (1985b: 45). It is true that the cases Homer-Dixon selected for study are all instances where there have been violent episodes, thus the claim that cases were selected to prove the initial assumption has merit (Gleditsch 1998 agrees). However, it does seem questionable to assume that two similar cases can be found given different ecological, cultural, and political contexts. What is most interesting is Levy's implicit suggestion that a case is not worth studying unless there is some element of violent conflict. The issue for Levy, then, is the need to examine the factors that explain 'different levels of violent conflict', and not the need to examine those factors which *might explain the absence of conflict* altogether. It is this thesis' contention that the more revealing strategy would be to examine cases without a violent outcome. This would shift the emphasis away from negative to positive peace, and would be more likely to lead to positive and long-term responses.

With respect to the core methodological issues debated by Levy and Homer-Dixon, the crux of the debate seems to hinge on the attempt by both to speak in positivist vernacular about an issue which both seem to acknowledge cannot be explained by positivist research strategies. This aspect of the debate is most useful as a demonstration of the frustrations associated with a strict adherence to positivist social science dictums. Finally, at the risk of overstating the claim, it must again be noted that all this attention (both from Homer-Dixon but even more so from Levy) given to violent conflict is misplaced. The issues that should be of more concern (at least in this thesis' view) are the day-to-day insecurities associated with the erosion of individual and group welfare and resilience.

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[25] 'Conflict' actually seems to be the preferred word; a word, it should be noted, that does not necessarily imply direct violence.

Despite a sensitivity to complexity, and despite the shift of focus away from the international to the local scale, Homer-Dixon has still said little about the fundamental question of *what makes people resort to violence?* The early notion of 'a threshold' seems indicative of this fundamental shortcoming. A threshold is the "border, limit (of a region); the line which one crosses in entering ... the beginning of a state of action, outset, opening" (Little et al 1973: 2294). The implication of its use the is that at some point communities experiencing ecological disruption will cross the threshold, transcend the limit of civility, and resort to violence. The discussion of pressures, scarcities and conflict depicts the circumstances and the conducive factors, but there is a leap of analysis from these to the decision to resort to force. In effect the key question - why fight? - cannot be wholly explained by compiling a litany of pressures. Were this wholly sufficient to explain the likelihood of violence, Gandhi would have preached bloody revolution and Mandela would have made recourse to militant retribution. Perhaps the more telling question to be examined then, is *why do people not resort to violence?* Hence, to repeat, a more productive research agenda would be to examine cases where, in the face of similar pressures, violence was not the end product (not cases where there were lesser degrees of violence as Levy suggests).

Homer-Dixon's research "provides additional support for a range of policies - from selective debt relief to enhancement of indigenous technical capacity - that many development experts have long recognised as valuable" (Homer-Dixon and Percival 1996: 4). This is important despite Levy's suggestion that it is "banal advice" which does not identify "key intervention points" (a profoundly dismissive attitude towards conventional wisdom about redressing environment and development problems) (Levy 1995a: 57). Although not the emphasis of Homer-Dixon's work, the point is that strategies for peace, justice, development and sustainability are necessary for there to be security. The implication is that there is little connection between environmental degradation and security when security is understood as a national concern. Instead, the problems of environmental insecurity are seen as problems of inadequate development. This is the subversive intent of Homer-Dixon's work. It adds impetus to the argument that environmental problems only have meaning for security if security is understood in *human* terms (see chapter 10).

6.6 'The Coming Anarchy'

A particularly notable exposition of the environment-conflict thesis is Kaplan's *The Coming Anarchy,* published in The Atlantic Monthly in 1994. Kaplan's paper is said to have been widely read in the White House, and is reported to have made an impact on U.S. President Clinton (Dalby 1996b). Kaplan relies heavily on a superficial interpretation of Homer-Dixon's work, which suggests that despite its qualifications, Homer-Dixon's message is one which appeals to doomsday prophecies and ethnocentric Realist accounts of the world.

Kaplan paints a grim and apocalyptic vision of the future. He seeks to depict "what the political character of our planet is likely to be in the twenty-first century" (1994: 45). He begins with the evocative line: "the Minister's eyes were like egg yokes", and offers "a premonition of the future" which includes "disease, overpopulation, unprovoked crime, scarcity of resources, refugee migrations, the increasing erosion of nation-states and international borders, and the empowerment of private armies, security firms, and international drug cartels" (Kaplan 1994: 44 and 46). *The Coming Anarchy* speaks of "the environment as a hostile power"; it says that "nature is coming back with a vengeance, tied to population growth"; and that "it is time to understand 'the environment' for what it is: *the* national security issue of the twenty first century" (1994: 54, 60 and 58). Thus "the natural environment is the key villain" in Kaplan's account of the world to come (Dalby 1996b: 472).

The Coming Anarchy is an ideologically laden, simplistic and apocalyptic account of the development and environment problems faced in the industrialising world. Smil says Kaplan "preaches with conviction and with the simplistic zeal of a prophet" and that "his conclusions are based on unqualified generalisations unmindful of enormous environmental and socio-economic peculiarities; he does not hedge his remarks" (Smil 1997: 124). *The Coming Anarchy* is comprehensively critiqued by Dalby (1996b). In the process, Dalby also provides telling insights into the broader environment-conflict thesis:

> Kaplan is in some ways a continuation of long-established lines of argument. But he is new in that his powerful articulation of environment as the cause of threats to national security has updated Malthusian themes and brought the 'environmental security' policy discussions forcefully to the attention of a wider public. In doing so Kaplan revisits many of the geopolitical assumptions in security thinking, and does so in specifying the environment as a cause of threat.....In the case of neo-Malthusianism and the more general policy discourse of 'environmental security', the 'threat' is

> often at least partly from somehow external 'natural' or 'environmental' phenomena;
>
> Kaplan's analysis can be read in terms of a persistent textual dualism between postmodern consumer aspirations and fear of 'reprimitivized' violence and environmental degradation;
>
> The political violence and environmental degradation are not related to larger economic processes anywhere in this text .... Kaplan's text show[s] a very limited geopolitical imagination, one that focuses solely on local phenomenon in a determinist fashion that ignores the larger trans-boundary flows and the related social and economic causes of resource depletion;
>
> He notes the dangers of the criminals from 'there' compromising the safety of 'here', but never countenances the possibility that the economic affluence of 'here' is related to the poverty of 'there'. The spatial construction of his discourse precludes such consideration (Dalby 1996b: 475, 480, 482, 484).

The Coming Anarchy is not so much an extreme exception as it is the logical conclusion of the environment-conflict literature. The ethnocentrism, Realism, exclusion, presupposition and denial of complicity that underwrites most of this literature is crystallised in *The Coming Anarchy*. It demonstrates this thesis' principal and overriding critique of this subset of the environmental security literature; that is that it misunderstands the causes of environmental degradation, favouring instead a recycled Realist reproduction of Others to the exclusion of legitimate humanitarian concerns. It also imposes a negative interpretation of possible futures, favouring apocalyptic visions and barbarity over a consideration of a peaceful future (Swart 1996). Its reputed success with the U.S. President is indicative of the U.S. approach to security policy, a point worth keeping in mind in the following chapter's appraisal of U.S. environmental security policy discourse.

6.7 Comment

Arguments that environmental degradation will induce violent conflict and social instability are theoretically lead rather than empirically informed. As theories, they are consistent with the Realist ontology, and share Realism's shortcomings as identified in chapter 4. This sub-section seeks to offer some further critical observations about the environment-conflict literature, with particular emphasis on the use of history, readings of nature, the use of the words 'conflict' and 'instability' and the interpretation of peace, the way in which it narrows the meaning of environmental security, and the possibility that it may be reified.

History

In much of the writing on the linkages between environmental degradation and conflict there is little appreciation of the long history leading up to contemporary environmental insecurities (as in chapter 3). This a fundamental failing given that it is the broader social and ecological degradation wrought by modernity which is the overriding context for any discussion of security and social tension. Thus Smil writes that "any thoughtful historian, and especially those fascinated by the complex relationships between civilisations and their environment, must be astonished by the utter neglect of long term historical perspectives" (Smil 1997: 109). There is also a lack of historical contextualisation of the specific cases where environmental degradation is thought to have been a factor in violent conflict. Even a recent history of these places would more than likely reveal the vitally important factors of unequal terms of trade, World Bank 'restructuring' programs, colonial and post-colonial imperialism, and the corruption of traditional cultures with Northern values and aspirations. However, all these other factors (there are no doubt more) are rarely acknowledged.

Many authors tend to pick and choose historical evidence in a way that highlights the negative instances whilst ignoring the positive (Elliott 1996). Myers, for example, asserts that "as far back as 6,500 years ago, Lagash and Umma went to war over water" (1996: 38); however it is Westing (1986b) who (perhaps unwittingly) perpetrates the greatest misperception here. Appendix 2 of *Global Resources and International Conflict* lists all the 'wars and skirmishes involving natural resources' in the 20th century. Westing counts 12 conflicts with a resource dimension, including the first and second World Wars. The first World War, he argues, was in part caused by population pressures, and the second by the need for added living space. The point of this is not to dispute the assertion that environmental factors were involved in past conflicts, although this is questioned given the difficulty of proving this even in contemporary times. Rather, the point is to assert, again, that history is a biased record that tells us far more about violence than it does about peace. As a body of evidence to support general arguments about any aspect of violent behaviour, history is thus suspect. It is even more suspect when it is presented as a list of isolated and uncontextualised instances of warfare in the way that Westing does. A more honest use of history would include discussion of those cultures that have lived sustainably and in peace. The overarching message of history is that that humans as individuals and

as a species continually adapt and survive, and are therefore able to adapt to environmental pressures. This historical perspective stands as perhaps the greatest counterfactual to declarations of 'the coming anarchy'.

The nature of nature

A second feature of the environment-conflict literature is its essentialised readings of human (internal) and external nature. It has already been suggested that there is a form of environmental determinism involved (Smil 1997, see above). This arises in part as the literature involves biological scientists (such as Gleik and Myers) commenting on matters of political science; and political scientists such as Homer-Dixon and Levy commenting on issues pertaining to biological science.[26] The assumption made of human nature is fundamentally a political Realist one - humans are expected to resort to force and coercion to achieve their goals. Rousseau's stag hunt is the lasting metaphor here. That Rousseau chose to allegorise human nature through the hunting of an animal is suggestive of the Realist conflation of nature internal with nature external, understanding both to be anarchic and brutal. With this, nature itself can be seen in threatening terms by people such as Kaplan (1994) and Winnefeld and Morris (1994). The scientific cosmology that denies order in the Other, and which has always underwritten modernity, resurfaces in this environment and conflict literature. The discourse, then, is one of barbaric southern Others residing in a decaying natural environs (over there). It is not surprising, but nevertheless not encouraging that this has intuitive resonance in the heartlands of modernity.

The environment-conflict literature also tends to perpetuate a dualistic understanding of the relationship between humans and the natural world. The relationship is depicted as one in which humans are threatened by nature, or in some texts, humans are threatening nature. The relationship is always seen to be antagonistic - the exchanges are *threatening*. This recourse to dualisms ignores the dialectical understanding of humans as nature rendered self-conscious (Bookchin 1982 - see appendix I). Most contemporary understandings of environmental security, and certainly those understandings true to the Realist tradition, assume

[26] This is not to say that this is a bad thing. Chapter 2 made it clear that interdisciplinary work is required, however, integrative approaches require taking each discipline seriously. In this respect the political scientists for the most part have made the transition better. The biological scientists tend to rush into political analysis without any care for meta-theory.

this simplistic dualism between humans and nature, and, as discussed in chapter 2, such dualisms are exclusionary and frequently violent.

Conflict, instability and peace

The environment-conflict literature talks of peace and conflict in particular ways. Conflict is almost always equated with direct violence. It is used to denote a fundamental Bad which harkens to images of tribal warfare and guerilla insurgence (both repeatedly referred to). This use of 'conflict' works in conjunction with the Realist natural cosmology which considers that in any contest violence is the 'natural' outcome. This 'conflict ergo violence' is a critical assumption of the literature, but is masked by the unexplained and vague use of the word 'conflict'.

Conflict, however, is not necessarily Bad, nor does it necessarily involve violence of either a direct or a structural kind. Many struggles over resources can be seen to be situations of 'conflict', however the vast majority of these are resolved without recourse to violence.[27] The Collins Dictionary of Sociology defines conflict as "the overt struggle between individuals or groups within a society, or between nation states" (Jary and Jary 1995: 113). Many forms of overt struggle, such as that between political parties, between sporting teams, or between academics, do not involve violence. Indeed, discrepancy, disagreement and struggle are inevitable given a degree of social diversity. The peaceful resolution of these differences is a basic function of ethics and politics.[28] The failure to peacefully resolve these overt struggles may lead to direct violence occasionally, and perhaps to structural forms of violence more frequently, but violence is not the inevitable outcome of conflict. Indeed, depending on the lens one uses, violence is rarely the outcome of conflict. Further, according to Marxist analysis at least, peaceful conflict is a necessary dialectical process which generates the syntheses that drives historical change (see appendix I).

Much of the literature uses the word 'instability' in a way very similar to its use of conflict - that is to denote an undesirable state of affairs. Instability in this context means sudden upheaval and radical change. It equates to a threat to the existing state of affairs which, by implication, is the desired state. So, the

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[27] See Ribeiro (1996) for an example of water and drought in the San Fancisco River basin in Brazil, where he explains that these pressure have not lead to direct-violence.

[28] Although, as Aristotle realised so long ago, and as shall be explained in chapter 11, the two are not distinct.

environment-conflict literature holds to a typically negative conception of security. What is to be secured is the modern global capitalist order from the threat of change. However, to make the point again, instability, not unlike conflict, does not necessarily imply change for the worse. Indeed, given that the areas where instability is anticipated are all areas where there are numerous and pervasive injustices and deprivations, change and instability are often to be welcomed. If environmental security means resisting, avoiding and suppressing change, as suggested in this literature, then it is implicated in the defence of injustice. Furthermore, given that social changes are inevitable, just as evolution is seemingly natural, suppression of change is ultimately futile. Instead, change should be welcomed and negotiated to ensure that it is non-violent.

Consistent with this negative conception of conflict and instability is a negative understanding of peace. Peace was discussed in chapter 2 as the striving for justice. This involves an absence of direct violence, but it also integrally involves the absence of structural violence; both are necessary. However, the equation of peace with *anti-war* or *not war* in the environment-conflict literature ignores the broader and more lasting positive dimension to peace. Indeed, the present emphasis on peace as *not war* manifests itself as peace through stasis; it is a negative peace acquired through the defence of modernity. In this way the environment-conflict literature works to defend against changes for positive peace.

Narrowing the issues

The emphasis on conflict occurs at the expense of awareness and understanding of the causes, effects, and solutions to environmental insecurity (as it is understood in this thesis). This is perhaps a product of the volume of this literature and its intuitive appeal to mainstream International Relations.[29] Dabelko and Dabelko are surely right to suggest that "all issues of environmental degradation should not be forced to fit the matrix of security and conflict" as this literature is wont to do (1995: 8).

[29] A classic example of this misdirection is the International Centre for Security Analysis' approach to environmental security. The ICSA "believes that, when studying environmental security, it is essential to answer two questions: what are the social effects of environmental change or damage? What types of conflict are most likely to result from these social effects?" (ICSA 1998). The question of how environmental damage is generated seems the more pressing one if there is any real interest in rectifying the problem. The question of whether the social affects might lead to positive outcomes also seems important.

It is desirable, then, to adopt a fuller and more holistic perspective on environmental insecurity. Some of the salient features of this would include appreciation of: *cause* - global economic and political processes and the macro-history of modernity; *context* - the history behind any particular case, the effects of culture and cultural mixing in any particular case, the biophysical setting, and the ways in which people adapt in ways that do not lead to violence and which may be effective in the short and long term; and *effects* - declining health and welfare, natural disasters, slow cumulative changes, accidents, and conflict. In this more holistic perspective conflict and instability are only one of numerous effects of environmental degradation. Overemphasising conflict therefore precludes recognition of these other effects. Further, when conflict does occur it should be seen as a particular and specific instance, not as proof of 'the coming anarchy'. Finally, a holistic approach implies that environmental security necessitates fundamental reform of the global political economy, and reform of the socially and ecologically degrading features of modernity. This holistic approach is explored more fully in chapter 10.

Theory and Prophecy

In that Soroos (1994) calls the environment and conflict literature a theoretical argument it is valid to briefly consider the possibility that this theory may affect a change in social 'reality' consistent with its image. Rogers succinctly touches on the problem of the environment-conflict thesis:

> There is much evidence that violent conflict occurs because violent conflict is anticipated. The idea of a preemptive strike may grow out of basic fight or flight instincts, but it may equally be a self-fulfilling prophecy; the behaviourist product of positivist/Realist assumptions about self interest (Rogers 1996: 3).

Similarly, Elliott suggests that predictions which "posit more conflict as environmental decline increases will become self-fulfilling prophecies" (Elliott 1996: 165). In short, in describing a world of 'coming anarchy', the environment-conflict literature helps to reify this world. This is borne out in the following chapter's discussion of U.S. environmental security policy.

6.8 Conclusions

Arguments that environmental degradation will lead to conflict either within or between states are numerous and prominent, but are for the most part unsubstantiated. These arguments are theories and not reflections of what goes on in the world. As theories, they are consistent with the political Realist approach to security, and they share all of Realism's weaknesses, including a focus on states at the expense of people. As theories they significantly encroach upon the otherwise peace promoting domain of Green theory. In this respect, as we shall see in the next chapter, they enable a colonisation of environmental matters by the traditional security apparatus.

In the final analysis the more telling question about the linkages between environment and conflict is not - *is environmental degradation likely to lead to violence?* - nor even - *how might environmental degradation lead to violence?* - but rather - *why are we interested in the linkages between environmental degradation and violence?* In short, *why this literature?* This chapter has shown that in general there is little evidence to suggest that environmental degradation will lead to violence and at that the processes by which this might occur are by no means clear. This is to say, then, that the first two questions are by and large irrelevant. It is valid at this stage to recall the earlier observation by Falk that scarcity will lead to the (potentially violent) defence of power by the already powerful. Given this, the answer to the latter *why* question appears to be that the environment-conflict literature is an ethnocentric and discursive primer to legitimate defence of the status quo. Thus the obsession with only one of the possible effects of environmental degradation (conflict) - at the expense of other effects and at the expense of taking seriously the root causes of the degradation - suggests that the net effect will be the justification of a state response that maintains the legitimacy of the security and military elite, and the justification for military and economic defence of Northern lifestyles. This will be demonstrated in the following chapter where recent U.S. government pronouncements on environmental security are discussed.

Chapter 7. Environmental (National) Security and U.S. Policy

7.1 Introduction

This thesis has discussed efforts to redefine security to include environmental considerations, and has examined the literature which makes linkages between environmental degradation and violent conflict. Implicit in both of these categories is the notion that environmental degradation affects the security of the nation-state. This is to be expected given the dominance of the state-centric Realist approach to security. This chapter seeks to consider the connections between national security and environmental degradation, and to critically examine policy manifestations of environmental security; both are necessary to meet this thesis' overarching aim of a critical examination of environmental security. It meets this latter goal through an examination of U.S. environmental security policy. A comprehensive critique of U.S. environmental security policy is lacking; meeting this need is a unique contribution to the study of environmental security.

This chapter begins by discussing the ways in which environmental degradation affects national security. Objections to the linkages between environmental degradation and national security are considered. It then examines U.S. government pronouncements and initiatives on environmental security, these are collectively referred to as the U.S. environmental security policy-discourse. These are classified into statements made in the National Security Strategy, statements and initiatives made by the Department of Defence, and statements and initiatives made by the State Department. These are discussed in turn. The chapter ends with some critical observations on this U.S. environmental security policy-discourse.

7.2 Environment and National Security

There are numerous links that can be drawn between environmental degradation and national security.[1] First, the economic foundation of military strength is itself

[1] This discussion is based on Barnett (1998a).

underwritten by the natural environment. If the natural capital base of an economy erodes, then so does the long-term ability to militarily defend against external aggression.[2] Accordingly, the ability of the industrialised North to transfer environmental externalities to the industrialising South helps the Northern economies to maintain their natural capital base, therefore sustaining economic growth and military superiority. Nevertheless, if we accept that economic development can be ecologically unsustainable, then we should consider that national security can be similarly unsustainable. The collapse of the former Soviet Union was due to an amalgam of causes of which ecological unsustainability was a part (Feshbach and Friendly 1992, Funke 1994, Peterson 1991). It is a reasonable assumption, then, that the state of the environment is an essential and unappreciated component of the Realist approach to security, and this is true even without considering the possibility that environmental degradation might cause conflict.

Second, in terms of the national interest, environmental degradation has many and complex negative effects.[3] It threatens individual and collective economic livelihood by eroding the natural capital base of the economy (Meadows et al 1972); it affects health through contamination of water, air and food, and by disrupting ecological processes thereby exposing humans to new health risks (McMichael 1993); declining environmental amenity reduces quality of life; and environmental degradation exacerbates inequalities between people - it has clearly become another factor in our have/have not societies.

In Australia, environmental degradation is arguably the biggest threat to the national interest.[4] Since European settlement Australia has lost 75% of its tropical forests (Bolt 1992: 90); 306 species of native plants and 47 species of native animals are presumed extinct or threatened with extinction (Boyden et al 1990: 142); in many parts of the country drinking water quality doesn't meet World Health Organisation guidelines (Nix 1990); and in urban areas in particular air pollution is having a detrimental affect on health (Commonwealth of Australia 1992a: 109). Further, given that three quarters of Australia's population lives on

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[2] Another consequence of this discussion is that economic and military strength may not be wholly accurate measures of national security.

[3] Security policy frequently purports to protect the 'national interest' (although exactly what the interest is - is never made clear). For example, the mission of the Australian Defence Force is "to promote the security of Australia, and to protect its people and interests" (Commonwealth of Australia 1996b: 1)

[4] Porter makes a similar case for the United States (1995).

the coastal fringe, the very real prospect of sea level rise caused by global warming is an enormous threat to Australian interests and way of life (Zann 1995: 29).[5] However, even a single organism can wreak havoc with Australian interests, for example, foot and mouth disease could cause rural output to decline by $6 billion in the first year alone (Commonwealth of Australia 1993: 19). Bolt (1992) compares land degradation with military invasion in terms of their relative likelihood and impacts. Land degradation has a greater overall cost to the Australian economy than military invasion due to its continued recurrence; in 1990 the cost of land degradation was $1.2 billion in lost agricultural production alone (Bolt 1992: 102, Boyden et al 1990: 118). In terms of loss of territory, over half of Australia's land surface suffers from some form of land degradation; an impact which is not likely to be matched by any foreseeable type of military engagement (Bolt 1992). Thus "it can reasonably be concluded that the security of Australia and Australians is far more at risk from environmental pressures than from military threat" (Bolt 1992: 104). This analysis questions the efficacy of Australia's present security and defence policies and the selective view of threats and impacts upon which these are premised.

A third connection between environmental degradation and national security comes from the recognition that national boundaries have little meaning with respect to environmental problems. This is of relevance to national security as transboundary environmental problems "challenge the primacy of the sovereign state actor in safeguarding territory, populations and interests" (Dabelko and Dabelko 1995: 9). Transboundary flows differ from traditional external security threats in that they are uncontrolled and most often unintended (Samson 1995). Climate change, for example, undermines national security in important ways:

> The possibility of [wo]man-made change in the world's climate is only one of a range of credible dangers that should lead to a major reappraisal and expansion of our basic concepts of national security.....we are talking about the basic strategic resources and systems that support life on this planet. And with these at risk, it is obvious that all nations, by definition, are insecure today, and survival -- the most elemental of human goals and the first duty of all governments -- is called into serious question....if the earth is threatened, so is each national subdivision of Earth, if the whole is insecure, so are its parts. There is simply no such thing as national security on an insecure planet -- nor can there be! (Wilson 1983: 71).

[5] See also Jacobson (1990) and Lewis (1989).

Similar pronouncements abound.[6] Rowlands argues that flows of "unwanted natural material from one state to another" are "the most vivid example of an environmental challenge to a state's way of life" (Rowlands 1991: 100). Boulding, however, is the most eloquent (and dialectical) on the nature of the environment with respect to national boundaries:

> In nature, everything flows. Water flows, air flows, soil flows, ice flows, and molecules dance in and out of stones..... Walls have never stopped flows of anything, not in ancient China and not in modern Europe. All boundaries are permeable.... Unilaterally formulated national security policies have little meaning in this context (Boulding 1991: 85).

These transboundary problems imply a common security approach (see chapter 5). Integral to the identification of transboundary environmental problems is the question of sovereignty, this is discussed in chapter 9.

A fourth line of reasoning connecting environmental degradation to national security is the notion that environmental degradation may induce conflict among nations. This line of reasoning is generally flawed and has been adequately covered in the previous chapter. A fifth set of linkages occurs when considering the military (as the agent of national security) and its environmental impacts, as well as its potential contribution to enhancing environmental security. This will be considered in the following chapter.

The understanding that environmental problems are national security issues is not unproblematic. According to Jervis, for example, environmental problems are "too far off, the scientific evidence is too ambiguous, the domestic interests involved are too conflicting, and the alternative approaches are too many" (1991: 64).[7] Deudney's concerns about linking environmental degradation to national security are the most compelling (Deudney 1990, 1991, 1992). Deudney offers three reasons as to why he thinks the linkage is analytically misleading. First, he argues that military threats are patently different from environmental threats, particularly in that military threats are deliberately imposed; as Prins eloquently puts it: "you can't shoot an ozone hole" (Prins 1991: 2).[8] Deudney suggests that national security logic is incapable of grasping environmental issues or dealing with them effectively. This is for the most part true in so far as national security

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[6] See, for example: Brown (1989), Byers (1991), Mathews (1989 and 1993), Mische (1989), Myers (1996), Porter (1995), Renner (1989).

[7] This scepticism plays upon the uncertainties inherent in natural science predictions. Gray and Rifkin are also sceptics, arguing that with respect to climate change "it would be irresponsible to commit disproportionate resources to solving a quandary whose very existence and severity are still uncertain" (1991: 51).

[8] Environmental problems are therefore 'threats without enemies' (Prins 1993b).

continues to be the domain of the military - and it seems particularly true in the U.S. context in which Deudney writes. However, few authors outside of the military/security establishment suggest that a traditional security response is required to meet environmental problems. The overwhelming message from non-military commentaries is that a redefinition of security is required, and that common security should be the preferred paradigm (chapter 5). In this respect Deudney perhaps misses the point of the literature, but in as much as Realist conceptions of security prevail, Deudney's point is not invalidated.

Deudney's second argument against linking environmental degradation and national security is that declaring "environmental changes as a threat to national security (as many environmental activists do) in order to mobilise action may be counterproductive and produce undesirable side-effects" (1992: 171). This is undoubtedly Deudney's most important contribution to the literature, and it is a concern which cannot be easily dismissed. Brock (1991, 1992, 1996) and Lipschutz (1992b) have also noted this dilemma. This is a concern which has been implicitly raised in previous chapters, and which will be given further consideration in the following discussion of U.S. environmental security policy. Finally, Deudney's third argument against environmental security as it applies to the nation-state is that "environmental degradation is not very likely to cause interstate wars" (1990: 461). He suggests that eco-war or greenwar is a weak mirage - this thesis is in agreement (chapter 6) (Deudney 1992).[9]

7.3 Environmental Security and U.S. Policy

The United States is the world's largest economy, has the world's largest military, and produces more greenhouses gases than any other country. For these reasons, the way in which the U.S. engages with the problem of environmental degradation is crucial for environmental security (however conceived). The U.S. government is the only government to significantly engage with environmental security.[10] In addition, the U.S. security policy community has been at the forefront of setting what Elliott calls the dominant 'environment and security' agenda (Elliott 1996).

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[9] 'Greenwar' is the term used by Bennett (1991).

[10] Although the former Soviet Union was in its latter days making similar gestures (see Khozin 1989 and Thomas 1992), and at the time of submission of this thesis the Australian Department of Defence was beginning to the use the term.

The policies discussed in this chapter are an important reason for this dominance as they operationalise the concept of environmental security in certain ways.

The subject of environmental security has been promoted in influential U.S. policy journals such as *International Security*, *Foreign Affairs* and *Foreign Policy.*[11] Given this, it is not surprising that the U.S. security and defence community eventually took environmental security on board. Dabelko and Simmons set the context:

> The number of US government and scholarly endeavours exploring the issues of environment and security, or "environmental security", is proliferating .... Many senior figures in the Clinton Administration have embraced environment and security ideas. Whilst these ideas have not produced a common policy agenda or focus, numerous rhetorical statements and government initiatives addressing the environment in the context of US security interests have appeared since 1993 (Dabelko and Simmons 1997: 128).

The Clinton administration has created a number of high-level positions to deal with environmental security, including a Senior Director for Global Environmental Affairs at the National Security Council, a National Intelligence Officer for Global and Multilateral Issues at the National Intelligence Council, elevating environmental management to the level of Deputy Under Secretary within the Department of Defense, and an Under Secretary for Global Affairs within the Department of State (Dabelko and Simmons 1997, Thomas 1997).

Recent U.S. statements and initiatives which incorporate the notion of environmental security can be loosely attributed to the National Security Strategy, the Department of Defense, and the Department of State. Given that each of these three institutions are mutually reinforcing and overlap in their promotion of U.S. security interests, this should be seen as a loose categorisation that helps facilitate discussion. The environmental security efforts of these three institutions will now be discussed.[12]

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[11] For example: Ullman (1983), Cooley (1984), Mathews (1989), Myers (1989), Homer-Dixon (1991), Starr (1991), Gleik (1993), Levy (1995a).

[12] This discussion is based on a number of documents available only (as far as I know) on the Worldwide web. There is no single hard-copy publication that contains all the necessary material. A forthcoming book edited by P. Harris from the project on Environmental Change and American Foreign Policy at London Guildhall University should help overcome this problem. This discussion of U.S. environmental security policy has been submitted for consideration as a chapter in this forthcoming book (publisher being negotiated).

7.3.1 The U.S. National Security Strategy

The U.S. National Security Strategy (NSS) is the most important unclassified statement of U.S. security policy. It has made reference to environmental concerns since 1991. Environmental issues figure prominently in the most recent (1997) NSS:

> Protecting the security of our nation - our people, our territory and our way of life - is my foremost mission and constitutional duty.... the dangers we face are unprecedented in their complexity..... environmental damage and rapid population growth undermine economic prosperity and political stability in many countries;
>
> We must continue to move strongly to counter growing dangers to our security: weapons of mass destruction, terrorism, international crime, drugs, illegal arms trafficking, and environmental damage.... [these] are global concerns that transcend national borders.... [these] threaten American interests and citizens, both directly and indirectly;
>
> We are protecting the global environment - managing our forests, stopping the spread of toxic chemicals, working to close the hole in the ozone layer, reducing the greenhouse gases that challenge our health as they challenge our climate;
>
> Our [last] strategy focused on the security implications for both present and long-term American policy raised by transnational problems that once seemed quite distant - such as resource depletion, rapid population growth, environmental degradation and refugee migration;
>
> We must always retain our superior diplomatic, technological, industrial and military capabilities to address this broad range of challenges;
>
> Crises are averted - and U.S. preventative diplomacy actively reinforced - through sustainable development programs that promote voluntary family planning, basic education, environmental protection, democratic governance and rule of law, and the economic empowerment of private citizens;
>
> Natural resource scarcities often trigger and exacerbate conflict. Environmental threats such as climate change, ozone depletion and the transnational movement of dangerous chemicals directly threaten the health of U.S. citizens... our national security planning is incorporating environmental analyses as never before.
>
> (Clinton 1997: 2-24)

That the environment figures in the NSS leaves no doubt that it is now a security issue for the United States. By virtue of the dominant influence of the U.S. on world affairs, all nations will now need to be conversant in environmental security. Although 'global' in name, the environmental security agenda is nevertheless being lead by the U.S.

It is therefore extremely important to try to understand what U.S. policy means when it talks of environmental security. The NSS makes continued reference to the environment as a 'danger', a 'threat' and a 'risk'. This

intertwining of risk with danger conflates the language of probability with the language of harm imposed by others. This is clear in the repeated likening of environmental degradation to drug trafficking, weapons of mass destruction, and terrorism. The NSS normalises the threat (most often involving and unspecified Other) by speaking of it as an objectified 'risk'. What is seen to be threatening and dangerous, however, is only that which might threaten U.S. interests - such as environmental refugees flowing into the U.S., or environmentally induced conflicts. How these perceived dangers specifically threaten the U.S. is not made clear; these are existential rather than specific threats. Hence the question - *insecurity how?* - is never adequately answered in the NSS. At least part of the answer is that the U.S. foreign policy community is still fundamentally concerned about environmental degradation restricting access to important raw materials (de Sherbinin 1995). Equally important is the need for "access to foreign markets" (a subsection of the 1997 NSS). Thus the insecurity of concern is the risk of a declining rate of economic growth.

International stability and political stability are also of prime concern to the NSS. This is not surprising given that Kaplan's *Coming* Anarchy "played a catalytic role in bringing the environment-conflict thesis to the attention of the highest levels of the Clinton Administration and the larger Washington policy community" (Dabelko and Simmons 1997: 136). That conflict is of prime concern is made clear by the Senior Director for Global Environment Affairs at the National Security Council: "from my perspective, the environment and security relationship builds in part on important linkages between resource scarcity and conflict" (Claussen 1995: 40). President Clinton has also referred to the likely outcome of "terrorism, tension and war" if environmental degradation is not halted (cited in Simmons 1995: 51). However, as argued in the previous chapter, it is by no means clear that environmental degradation will result in any violence, particularly between nation-states.

It is assumed that by 'instability' the NSS means direct violence, given that no definition of security is made, and that the security/not-war conflation is strong in U.S. security discourse. However, the most probable forms of international conflict are not likely to involve direct violence, but will take the form of exacerbated diplomatic tensions between North and South arising from the structural violence generated by the U.S.-led global economy. These may well escalate if the U.S. behaves hegemonically in its engagement with the South to

secure the environmental interests it perceives to be important. The NSS can be read as a discursive primer for such an engagement.

There is a danger that what the U.S. appears to fear most (refugees and conflict) is likely to be reified by its own policy discourse. In terms of the broader North-South issue, the contradictions and injustices that are exposed in the environmental insecurity of many people requires not a defence of the Northern 'territory' and 'way of life', but radical and profound change in modern institutions and beliefs. The NSS's security/defence discourse treats these contradictions and the immanent potentiality of radical change in a particular way (see section 7.3.4 below). It perpetuates the status quo and denies the need for change. The long term success of such a 'strategy' is an open question, but what is more certain is that continuing to defend 'our way of life' will see more exploitation of those people and ecosystems in the industrialising world, and consequently more insecurity for the many in the name of the security of the few.

Despite these problems, the 1997 NSS is notably more benign and informed with respect to environmental degradation than the 1996 NSS, which (astonishingly) countenanced the possibility that there might be competition between nations for "dwindling reserves of uncontaminated air" (in Simmons 1995: 47-48). Although the 1997 NSS is still very much about national security and threats emanating from outside the United States, there is significantly greater awareness of the measures required to promote environmental security, including increasing aid, and promoting family planning and education. The NSS also aims to implement the Program of Action on population growth developed at the 1995 Cairo Conference, and it seeks to achieve Senate ratification of the Biodiversity Convention. So, however rhetorical the understanding, and however questionable the achievements the 1997 NSS claims to have made, it nevertheless demonstrates a more sophisticated understanding than it predecessor. This is a welcome sign of a gradual shift in the approach of the U.S. to global environmental politics.

Counterbalancing these positive developments, however, is a particularly strong free trade agenda which is arguably contrary to the goals of environmental security. Economic security still takes priority over environmental security in the U.S. strategic vision. Also of concern is the perceived "responsibility.. to build the world of tomorrow by embarking on a period of construction - one based on .. enduring American values and interests" (Clinton 1997: 3). The U.S. appears

willing to impose its values on others. Striving to be a value hegemon in this way is far from consistent with the interests of peace, and given that the U.S. is one of the biggest polluters in the world, a world shaped in its image would be far from environmentally secure. Finally, it is alarming that the United States considers that its nuclear weapons "serve as a hedge against an uncertain future, a guarantee of our security commitments to allies and a disincentive to those who would contemplate developing or otherwise acquiring their own nuclear weapons" (Clinton 1997: 18-19).

7.3.2 The U.S. Department of Defense

In 1995 the then U.S. Secretary of Defense (William Perry) asserted that "environmental security is now an essential part of the U.S. defense mission and a high priority for DOD" (Perry 1995: 1). The involvement of the U.S. Department of Defense (DOD) began in 1990 when Senator Sam Nunn - Chair of the Senate Armed Forces Committee - said:

> There is a new and different threat to our national security emerging - the destruction of our environments. The defense establishment has a clear stake in countering this growing threat. I believe that one of our key national security objectives must be to reverse the accelerating pace of environmental destruction around the globe (cited in MacDonald 1995: 2).[13]

Nunn uses a particular discursive strategy here - namely the reference to 'global' environmental problems as *threats* - which justifies the ongoing need for military involvement. At this point it is worth remembering Deudney's argument that the military is an inappropriate institution for dealing with environmental problems. It is less than obvious how the U.S. military might help 'reverse the accelerating pace of environmental destruction around the globe', unless Nunn is proposing to disburse the Pentagon's budget (which he is not). There are some potentially positive roles for the military with respect to environmental degradation (see chapter 8), however none of these justify continued high levels of military expenditure.

Also in 1990, Senator Al Gore (now Vice President) published a paper calling for a Strategic Environment Initiative (Gore 1990). Gore stated that "the global environment has thus become an issue of national security", and proposed that what was required was "a mobilisation of talent and resources usually

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[13] In 1994 in his *Annual Report to the President and Congress* the then Secretary for Defense Les Aspin said: "new environmental health and safety threats to U.S. security have emerged over the past two decades. They threaten U.S. national security and quality of life. They also threaten the Department's military mission" (cited in Dunaway 1995: 1).

reserved only for the purposes of national defense" (1990: 60 and 63). Gore is by far the most thoughtful of prominent U.S. officials speaking of environmental security. In his 1990 paper he argued that radical changes in the meaning and implementation of development were required if environmental degradation is to be halted. Gore's SEI was consistent with the policy integration idea of sustainable development in that it sought to cut across all U.S. policy sectors. He rightly identified energy research and development policy as the sector most urgently requiring reform. He sought to reverse the funding priorities of the U.S. Department of Energy, which, in 1990, devoted two-thirds of its budget to defence-related programs and only one-fifth for energy Research and Development (Gore 1990: 66). However, Gore was reluctant to draw on funds from defense to finance environmental policies. This reluctance explains in part why his otherwise commonsense proposals were ultimately reduced to a set of narrow military and foreign policy responses.

Following Nunn and Gore's appeals, the U.S. Congress allocated US$200 million to the Strategic Environmental Research and Development Program (SERDP) operated by the Department of Defense (Thomas 1997).[14] The SERDP has four functions, namely: to promote research of relevance to the DOD and the Department of Energy (DOE) to enable them to meet their environmental obligations; to identify technologies developed by DOD and DOE which would be useful to other governmental and private organisations; to supply other governmental and private organisations with data and data handling mechanisms for use in environment related research and development; and to identify technologies developed by the private sector that might be of use to the DOD and DOE (Thomas 1997). Therefore, the implicit function of the SERDP seems to be to make sure that DOD and DOE compliance with environmental regulations is cost effective, and that any potential marketing possibilities from DOD and DOE research and development are exploited. This commercial function is revealed in Perry's report to Congress: "the Department's [technology] strategy is to ... expedite the use and commercialization of these technologies" (Perry 1995: 3-4). The SERDP steering council is comprised of six representatives from DOD, three from DOE (a long standing partner in the U.S. nuclear weapons program), one from the Environment Protection Agency (EPA), and one from the Coast Guard

[14] According to recent information, the forthcoming 1999 Defense Authorisation Bill seeks to radically reduce funding for the SERDP (see the Environmental Change and Security Project discussion group: <<http://ecsp.si.edu>>) This questions the U.S. government's environmental credibility.

(Thomas 1997). The EPA has been coopted into the SERDP, one suspects, to add environmental credibility.[15]

In 1993 the Department of Defense upgraded its division responsible for environmental matters to the level of deputy undersecretary (Thomas 1997). The department's official title is the Office of the Deputy Under Secretary of Defense (Environmental Security); with an untypically bland, but obligatory acronym of DUSD(ES) (one would have thought DUDES was possible!). Initially, DOD involvement in environmental matters was domestically-oriented and not linked to security as such. This involvement began in 1984 with the establishment of the Defense Environmental Restoration Account (Perry 1995). A number of legislative acts progressively forced the DOD and DOE to comply with environmental legislation. The two most important were the 1986 Superfund Amendments and Reauthorisation Act, and the 1992 Federal Facilities Environmental Compliance Act (Perry 1995, Thomas 1997).[16] Hence, much of the impetus for the DOD's environmental activities was not internally driven but externally imposed. Thomas (1997) suggests that at the bureaucratic level, the DOD moved to take responsibility for its environmental problems in order to prevent the EPA from gaining some leverage over defense policy.

This imposition of compliance is clearly revealed in the first of the DUSD(ES)'s "overriding and interconnected goals" which is "to comply with the law" (DOD 1997a: 1). The other three goals are:

> To support the military readiness of the U.S. armed forces by ensuring continued access to the air, land and water needed for training and testing;
>
> To improve the quality of life of military personnel and their families by protecting them from environmental, safety, and health hazards and maintaining quality military facilities;
>
> To contribute to weapons systems that have improved performance, lower cost, and better environmental characteristics.

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[15] The EPA has a clear position on environmental security: "Environmental Security is an emerging concept in U.S. policy that combines traditionally defense-related activities with environmental protection. A broad definition of U.S. national security encompasses elements such as food, energy, and economic security that can be affected by *environmental degradation originating from sources outside the United States*" (EPA 1997 - my emphasis). This suggests, then, that the EPA understands the focus of the DOD to be on threats from the *outside*.

[16] Between 1990 and 1995 the DOD increased its expenditure on environmental programs from US$1.4 billion to US$5 billion (more than half Australia's total defence budget) (Thomas 1997). Thomas notes that US$5 billion is about 2% of the total defense budget, and so suggests that the best that can be said of this effort, in context, is that environmental concerns at least now register with the DOD, but are nevertheless still not taken seriously. Thomas adds that at current rates of expenditure, DOD would not comply with current legislation until around 2050.

(DOD 1997a, Environmental Security Mission Statement: 1).

In this view environmental security is clearly a matter for defense, an outcome neatly prepared for by the NSS. It is clear that that which is to be secured is the 'military readiness of U.S. armed forces'. The threat is the possibility that environmental degradation might undermine the effectiveness of the US military by limiting access to training areas, or by detracting from the health and welfare of military personnel. The nature of the DOD's response is consistent with the reactive and rhetorical position many other sectors and government agencies throughout the world have adopted in response to environmental concerns and laws.

The reference to weapons systems with 'better environmental characteristics' is ambiguous, but in Perry's report to Congress he suggests that DOD is seeking to "incorporate environmental security considerations into all aspects of weapon system acquisition, maintenance and operations" (Perry 1995: 3). The aim seems to be to factor in environmental benefits and costs into weapons systems purchasing. Perry uses words like "where possible" and "as feasible", which suggests that this is a rhetorical - more than it is a practical - goal (Perry 1995: 3). It is difficult to see a secretive weapons negotiation process devoting much attention to the environmental characteristics of the weapons in question. Indeed, where this may be given most attention is the ability of the weapon to *destroy* life rather than to conserve it. It seems highly ironic and indicative of the hollowness of the DOD's acquiescence to environmental issues that it can seriously speak of "environmentally benign" weapons when it has a massive arsenal of nuclear weapons (Perry 1995: 3).

Having made these criticisms, it must be acknowledged at least tacitly that if there is to be a military, it might as well be one which seeks to minimise its environmental impacts. If the U.S. DOD has to use 25 million acres of land, and own the "largest federal archaeological collection in the world", it is a small blessing that it now acknowledges its environmental responsibilities (Perry 1995: 5). However, these responsibilities should be met through substantial action. In the absence of, say, a substantial redistribution of funds and personnel, it seems that the DOD is using environmental security (a term which ideally suits its needs) to promote its (questionable) green credentials and to marginalise the efficacy of critical social movements. It thus stands as perhaps the most telling example of empty institutional co-optation of environmentalism; a co-optation made possible

by the vagueness of concepts like sustainable development and environmental security.[17]

The DUSD(ES) claims that it has "a vibrant and growing role in enhancing international environmental security" (cited in Simmons 1996: 132). As well as turning their enforced compliance with environmental regulations into a 'good citizen' policy within the U.S., the Pentagon is seeking to extend its environmental security activities to other regions. Thus:

> The U.S. military's role in environmental protection is manifold: it demonstrates leadership in the U.S. and abroad, helps guarantee access to the air, land and water needed to train U.S. forces, and helps promote environmentally sustainable behaviour on the part of other militaries around the world;
>
> DOD's view of 'environmental security' [also] comprises ..... understanding where environmental conditions contribute to instability and where the environment fits into the war and peace equation; bringing defense-related concerns to the development of national security; [and] studying how defense components can be used as instruments of U.S. global environmental policy.
>
> (cited in Simmons 1996: 132-133).[18]

Thus the Pentagon sees itself as a promoter of sustainability and a leader in environmentally responsible behaviour amongst militaries. These claims are made unselfconsciously and in spite of Renner's (1991) observation that the Pentagon is very likely the world's largest consumer of energy worldwide, and is therefore most likely the world's largest producer of greenhouse gases (see chapter 8).[19] Further, these claims ignore the point that this damage transpires for no productive outcome other than the dubious need to maintain national security.

The leadership that the U.S. military apparently demonstrates is therefore highly suspicious. It may indeed be an ecologically modern military, but it is nevertheless the world's most omnipotent, has the largest stockpile of nuclear

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[17] See Beder (1997) for a discussion of the way private corporations have similarly manipulated green vernacular.

[18] See also the document *Philosophy of DoD International Environmental Security* (DOD 1997b) which is in point form and scarcely contains a proper sentence (perhaps a posting of a seminar outline but nevertheless accessible via the DOD's website).

[19] Seager also points to the extensive environmental degradation wrought by military activities, particularly by U.S. forces: "increasingly, the presence of a military facility is the most reliable single predictor of environmental trauma" (1993: 33). Militaries are perhaps the greatest institutional perpetrators of environmental damage and are - by virtue of their masculine culture and very presence - a significant perpetrator of social degradation (see Enloe 1990 and Seager 1993). This will be discussed further in the following chapter.

weapons, and has the largest budget of any military in the world.[20] Thus the environmental security discourse propagated by the U.S. DOD is not unlike 'limited nuclear war' in its ability to obscure the bigger picture of unnecessary destruction.

When 'access to the air, land and water needed to train U.S. forces' applies to environmental security within the U.S., it is problematic given that many military training areas have significant environmental contamination and lie adjacent to indigenous people's homelands (see Renner 1991 and Seager 1993). However, when understood in terms of 'international activities', as it is in the citation above, it seems to be a blunt admission of the desire to enclose other people's lands for U.S. military training. On this point it is also worth noting that although the DOD may be working towards cleaning up its bases at home, and prides itself on reducing its record of violations of domestic law, there is no similar commitment with respect to cleaning up its existing and former bases abroad. Perry's nine page report to the President and Congress devotes only seven lines to the issue of overseas bases, as opposed to one and a half pages to restoring DOD facilities at home (Perry 1995). Of these seven lines the salient points are that (my emphasis): "DOD will *consult* with the host nations on environmental compliance and clean up", and that for the most part "funding ... will be *negotiated* with the host nation" (Perry 1995: 9). So, "the official position of the U.S. government is that it is not generally obliged to clean up hazardous wastes at foreign military bases" (Siegel 1996: 16). If there were a genuine commitment to 'global' environmental security issues then there would be action to support this limited recognition of responsibility for U.S. bases abroad.

The desire to understand where 'environmental conditions contribute to instability' (see above) demonstrates the way in which the environment-conflict literature supports military appropriation of environmental concerns.[21] This is also consistent with the Realist approach to security. That this desire is also related to national security only serves to strengthen the links between the military and environmental security. Indeed, when the DOD begins looking at ways in which

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[20] Indeed, the limitations of the 'weak' account 'ecological modernisation' are no more apparent that when examining the efforts of the Pentagon (see Christoff 1996, and Appendix I).

[21] Indeed, Dabelko and Simmons (1997) suggest that a briefing given by Homer-Dixon (in 1993) to the National Security Council Global Affairs Directorate stimulated the incorporation of environment and conflict ideas into the DOD's work. This casts doubts over the legitimacy of Homer-Dixon's claim that his work has sent the wrong signal to U.S. policy (see Griffiths 1997 for a broad coverage of this issue).

U.S. troops can "help meet Asia's environmental protection needs" (Vest 1995), the conflation of security policy, military-led imperialism, and environmental issues becomes somewhat more obvious. If nothing else, the Pentagon's interest in environmentally induced conflicts suggests the construction of new reasons to maintain military readiness, and so more reasons to forestall payment of the post-cold war peace dividend. The possibility of a peace dividend is reduced when the impossibility of peace is constantly proven through discourses of danger.

The assistance the U.S. DOD gives to other militaries around the world is not given according to need but according to traditional geopolitical dictates. For example, the environment has been a key element of the continuation of NATO (North Atlantic Treaty Organisation) beyond the end of the cold war. Former Secretary General of NATO, Manfred Worner, is particularly revealing, saying that "no other NATO country, in our traditional division of labour, equals the United States in its global responsibilities" (1991: 101).[22] The 'responsibility' to which Worner refers is "to be the purveyor of stability, not only vis a vis East and Central Europe, but also the world at large" (1991: 102). This can be read as the search for new reasons for old orders, what Worner himself calls a "shift ... in the rationale for our defense" (1991: 102). Worner refers to "the immense conflict potential that is building up in Third World countries, characterised by ... climate shifts and the prospect of environmental disaster"; which suggests that the environment now figures as part of the rationale for the Northern management of global affairs. Thus for Dalby "this NATO understanding of the post-cold war world is clearly one of the persistence of 'Northern' institutions as the core political arrangements from which the rest of the world can be 'managed'... [hence] the theme of a select few managing the world's affairs is clear" (1998b).[23] This is precisely the outcome that critics in Southern states feared would result when environmental matters began to be understood as security issues (see for example Saad 1995). It should be noted that these managerial ambitions run counter to an important theme in Green theory, which is that local responses and local autonomy are necessary to overcome environmental degradation.

Bearing in mind Dalby's observation that adding the environment into traditional geopolitical security formulations merely perpetuates 'the threat from

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[22] See Dalby (1998b) for a more comprehensive discussion of Worner and NATO in the post-cold war era.

[23] Forthcoming, cited from draft - page number unknown.

the South' to justify further the hegemony of the North, it is instructive to look at DOD-NATO environmental security initiatives. The U.S. DOD is involved in:

> An agreement on environmental protection with the militaries of Norway, Sweden, Poland and Russia;
>
> A NATO pilot study on environmental aspects of re-using former military lands;
>
> A NATO pilot study on environmental management systems;
>
> A NATO pilot study on "environmental security in an international context";
>
> An Arctic military environmental cooperation program with Norway and Russia;
>
> A Baltic Sea initiative;
>
> NATO's Committee for Challenges to a Modern Society;
>
> A trilateral agreement with Canada and Australia on environmental security issues;
>
> An Asia-Pacific defense environmental security initiative "to open up a military environmental venue for cooperation with Pacific Rim countries".
>
> (Cited in Simmons 1996: 134)

The DOD tells us that it is "earning a reputation for strong environmental leadership within NATO", which, following the critical reasoning above, suggests that it is strongly complicit in the extension of NATO and the U.S's managerial agenda (Perry 1995: 9). Further, "DOD is helping to *educate* Eastern European military personnel" on environmental matters to help with "cleaning up military facilities for conversion to civilian use" (Perry 1995: 9). It is not difficult to see why NATO and the DOD would be interested in *conversion* of Eastern European bases to civilian use; it seems the old enemy can be *converted* under the auspices of environmental security. This would of course be no bad thing if a similar conversion were underway in NATO countries, but the DOD is not as clear about the conversion of its own bases as it is about the conversion of former Eastern Bloc bases. There also seems to be military intelligence gains in such cooperative ventures; as Goodman of DUSD(ES) has tellingly put it: "environmental security cooperation yields the benefits of traditional security cooperation; insight into, and influence upon, another nation's military structure" (Goodman 1996: 100).

This may be an overly sceptical reading of NATO and the DOD's motives, but were Eastern Europe not empowered with nuclear weapons and significant conventional war fighting capacity, and were it not adjacent to western Europe,

then NATO/DOD interest would surely be less intense.[24] Using environmental security as means to reach out to other nations through military institutions is geopolitical speak for environmental security as means to *contain threatening Others*. The tangible initiatives thus far have focused on Eastern Europe, largely through the auspices of NATO/U.S. confidence building approaches. The reason for this lies in the discourses of danger that have always underwritten the Realist approach to security. Containment and engagement is seen to be required, and environmental security is one means for NATO to achieve this. In contrast, the impoverished South, although scripted in most of the literature as a barbaric Other, has less capacity to threaten the North. Hence despite the efforts of some authors to depict the South as a threat in terms of refugees flows, declining access to valuable resources, and a vague disruption to 'international security', these threats are by no means as real in the Realist imagination as the threat from the usual enemy in Eastern Europe. In this context, environmental security is not about the environment, it is about (Realist) security. So, there is virtually no action to help the South, the lack of clear economic returns no doubt compounds the disincentives for doing so. The threat from the South, then, is nothing more than a discursive ploy to keep open the possibility of military intervention in other parts of the world.

For the DOD the problem of environmental insecurity is still fundamentally a problem of Realpolitik. Ethical concerns are absent and the Good is understood in a highly parochial (not universal) way. Further, in that military activities create environmental insecurities for people living within the U.S., this sense of the Good often does not apply to the very people the state alleges to protect. More importantly, two thirds of the world's people may well face greater insecurity and deprivation in the future (let alone now), but this is not seen as sufficient cause for substantial action. Indeed, turmoil in the industrialising world is arguably less of a problem and more of an opportunity for capitalist speculation - keeping the industrialising world 'lesser developed' may well be necessary for the accumulation of profits to U.S. based transnational corporations (Pilger 1998).

Therefore, it seems that efforts to build peace (however feeble) only focus on those who threaten the capitalist peace. Thus the question must be raised - is the best path to world peace not to arm the South? Would a proliferation of the

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[24] The selective vision here was clearly indicated in the 1994 NSS which stated that: "this is not a democratic crusade; it is a pragmatic commitment to see freedom take hold where that will help us most" (cited in Dunaway 1995).

means of violence expose the ethical interruption that Realpolitik creates? One would hope not, the logic of violence cannot be used to overcome violence; such an immanent critique clearly has limitations in this context. This discussion, however, points to the limitations of the self-interest rationality prevalent in much of the environmental security literature: to wit, we should act because it is in Our (the nation's) interest. If this remains the strategy of environmental security and environmental foreign policy more generally, then motivating discourses of danger will have to be constantly recreated in a disturbingly similar way to which threats are sought out by strategic planners to justify militarised national security (indeed the two logics are interdependent).

7.3.3 The U.S. State Department

The U.S. State Department became formally involved in environmental security in 1996 when (then) Secretary of State Warren Christopher delivered a landmark speech at Stanford University. Christopher said that "as we move into the 21st century, the nexus between security and the environment will become even more apparent" (cited in Dabelko and Simmons 1997: 127). The Stanford speech is laden with references to the effect of environmental degradation on U.S. interests and security. Christopher identified two principal reasons why environmental issues should be incorporated into U.S. foreign policy:

> First, environmental forces transcend borders and oceans to threaten directly the health, prosperity and jobs of American citizens. Second, addressing natural resource issues is frequently critical to achieving political and economic stability, and to pursuing our strategic goals around the world (Christopher 1996)

He added that:

> The United States is providing leadership to promote global peace and prosperity. We must also lead in safeguarding the global environment on which that prosperity and peace ultimately depend (Christopher 1996).

This is similar to the claim to global managerialism present in NATO post-cold war security doctrine. It also scripts 'environmental forces' as threats. The question - *whose security?* - or in this case - whose 'peace and prosperity'? - must be asked. The answer is less the peace and prosperity of all people, and more the peace and prosperity of the U.S. and its allies. Further, the question - *insecurity how?* - remains unanswered. It seems that the threats are existential, suggesting a discursive ploy to maintain U.S. management of the world in the name of 'global' peace and prosperity.

A notable feature of Christopher's speech was the way in which he managed to transfer responsibility for environmental problems away from the U.S. and onto the 'globe' via a continued recourse to threats to the national interest. For example:

> Across the United States, Americans suffer the consequences of damage to the environment far beyond our borders. Greenhouse gases released around the globe by power plants, automobiles and burning forests affect our health and our climate, potentially causing many billions of dollars in damage from rising sea levels and changing storm patterns (Christopher 1996).

Christopher did not mention that 24% of the offending greenhouse gases come from the U.S. alone, nor that that the U.S. produced 276,000,000 metric tons of hazardous wastes between 1991 and 1994 (as opposed to 7,800 in Canada and 2,000 in the U.K.) (UNDP 1996).

Christopher indicated the degree to which military power is involved in affecting U.S. 'strategic goals':

> In carrying out America's foreign policy, we will of course use our diplomacy *backed by strong military forces* to meet traditional and continuing threats to our security, as well as to meet new threats ..... But we must also contend with the vast new danger posed to our national interests by damage to the environment and resulting global and regional instability (Christopher 1996 - my emphasis).

This passage clearly reveals the linkage of military diplomacy with environmental degradation and instability, suggesting that the military has a potential role to play in managing (anticipated) environmentally induced conflicts.[25]

The latent economic agenda in U.S. foreign policy is evident in Christopher's speech. For example, he talked of the U.S's "enormous stake in consolidating democratic institutions and open markets" (1996).[26] Democracy and free markets are twin pillars of contemporary U.S. foreign policy, yet the two are

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[25] The usual foreign policy targets are referred to in Christopher's speech; water wars in the Middle East are mentioned, China is discussed, and on the former Soviet Union Christopher says that "governments that abuse their citizens too often have a similar contempt for the environment" (Christopher 1996). So, environmental degradation is now added to the list of the old foe's complicity in evil.

[26] Winnefeld and Morris (1994) also suggest that promoting free economies should be a key element of U.S. environmental security policy. This was a theme of the 1993 NSS as well, where Bush referred to liberalised trade and "international institutions for financial cooperation and development assistance" as "proving their worth in responding to the new challenges of aiding the former Communist countries" (cited in Dunaway 1995). Butts is more transparent than most, arguing that NAFTA (North American Free Trade Agreement) and GATT (General Agreement on Tariffs and Trade) are designed to open economies to U.S. capital; and that "economic growth is threatened by regional instability, resource tensions and environmental problems [which] can .... deny the U.S. access to new markets" (Butts 1996: 23).

by no means as mutually dependent as the State Department would wish the world to believe. An 'open' economy need not respect the rights of its people, indeed, arguably, a government that opens it economy is negligent of its responsibilities to its people. Further, opening the economy is not necessarily what democracies do.

The economic self-interest goes further. Christopher said that "American businesses know that a healthy global environment is essential to *our* prosperity"; and that "protecting the environment also opens new business opportunities. We are committed to helping U.S. companies expand their already commanding share of a [US]$400 billion market for environmental technologies" (Christopher 1996). Thus a part of the rationale for DOD involvement in Eastern Europe, and the SERDP, becomes clearer.

Christopher's speech unveiled the State Department's Environmental Initiative for the Twenty-First Century, which involves creating alliances between the various divisions of the State Department; creating various forums on issues and 'key regions'; and progressively establishing 'environmental opportunity hubs' in key embassies (Department of State 1996). One of the objectives for these opportunity hubs is to "help U.S. businesses sell their leading-edge environmental technology" (Christopher 1996). The Initiative also introduced the 'partnership for environment and foreign policy' program which seeks to promote greater cohesion on environmental issues among the various divisions of the State Department.

A key part of the Environmental Initiative is the production of an annual report, the first of which was issued in 1997. From an environmental perspective, this first annual report is a far more encouraging document that Christopher's early speech. The inside/outside theme is far less evident, although it has by no means disappeared. However, there is now some degree of recognition of the U.S's contribution to environmental problems. What is also encouraging is a sense of the borderless, for example:

> The State Department now operates on the premise that countries sharing common resources share a common future and that neighbouring nations are downstream and upwind, not just North and South or east and west, of each other. Threats to a shared forest, a common river, or a seamless coastline are forcing countries to expand their existing bilateral relationships to include environmental issues, and to create new regional frameworks to confront and combat shared environmental challenges (Department of State 1997).

This is not say that the State Department has completely reformed; its efforts must still be read in the context of the National Security Strategy and Christopher's early speech as part of the U.S's managerial ambitions. Words like 'threat' and

'combat' certainly indicate a less than benign discourse. However, what is striking here is the presence of a global outlook that seems to depart from the practical geopolitical imagination underlying earlier pronouncements. There is a certain ecological sensibility in the reference to 'downstream and upwind' for example, which indicates either a better awareness of ecological realities, or a more sophisticated 'spin'; both possibilities suggest taking the State Department seriously as an actor in global environmental politics.[27] This possible shift in sensibility is encouraging, but more strident reforms are necessary to break away from the limited and environmentally counterproductive Realist conception of security and foreign policy.

7.3.4 Comment

According to Porter: "the Clinton Administration's acceptance of the environmental security approach clearly has not lead to the militarisation of environmental policy issues" (1995: 222). Porter's view is supported by Myers, who writes that: "I had never thought I would raise a cheer for the Pentagon view of life. Hallelujah, it seems there is no limit to what enlightened people can envision" (Myers 1996: ix-x).[28] Such views fail to recognise the way in which the U.S. defence and foreign policy community has narrowed the concept of environmental security to justify their position as elite guardians of the national interest; this is a "classic bureaucratic effort to retain comparable budgetary outlays and reap public relations benefits" (Dabelko and Simmons 1997: 132, see also Dabelko and Dabelko 1995).[29]

The NSS, DOD and State Department interpret environmental security in a way that maintains the legitimacy of the U.S. government in the face of pressing environmental problems. By deploying a green rhetoric - however vacuous - the state makes enough of a token gesture to placate the concerns of the general public, and to forestall what Habermas would call a 'legitimation crisis' - where state legitimacy is seriously undermined by a failure to provide for its constituents' interests (Habermas 1976). This completely fails to engage with

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[27] Tim Wirth, the Under Secretary of State for Global Affairs, displays a similar ecological sensibility: "simply put, the life support systems of the entire globe are compromised at a rapid rate - illustrating our interdependence with nature and changing our relationship to the planet" (cited in Simmons 1995: 54).

[28] To be fair, Myers goes on to add that he is sceptical given Congressional cuts to foreign aid, but his scepticism does not in any way extend to the Pentagon itself.

[29] Pirages calls the U.S. response "cosmetic" and "timid", arguing that environmental security has "not revamped foreign policy and security thinking" (Pirages 1997: 37).

environmental problems themselves. As chapter 3 has argued, environmental insecurity is a product of capitalism, militarism, industrialisation and instrumental reason, yet U.S. environmental security policy-discourse shirks consideration of these root causes through what Hay calls "a complex repertoire of responsibility and crisis-displacement strategies" (Hay 1994: 217).[30] The U.S. approach to environmental security maintains legitimacy by:

> A combination of symptom amelioration, token gesturism, the "greening" of legitimating political ideology, and the displacement of the crisis in a variety of different directions: either downward into civil society; or upward onto a global political agenda: or, indeed, sideways in presenting the crisis as another body's (eg state's) legitimation problem (Hay 1994: 221).

These various tactics can be seen in the U.S. environmental security policy-discourse. The tardy effort to clean up contaminated bases 'at home' (but not abroad) is indicative of the 'symptom amelioration' tactic. The 'greening of political ideology' is most clearly manifest in the environment-conflict discourse which is fundamentally consistent with the Realist ontology. There appears to be little evidence for displacement downwards into civil society - perhaps not surprising given the enormous variety of non-governmental groups vying for legitimacy in domestic U.S. politics. However, the tactic of displacing problems up to the global level is clear, particularly in State Department pronouncements. That this global rhetoric also serves to enhance U.S. aspirations to global management further enhances the lure of this tactic. Finally, the displacement sideways to present environmental degradation as someone else's legitimation problem is also apparent in the constant references to 'instability' and political upheaval which intertwine with the environment-conflict discourse. For the U.S. government then, environmental security is used to preserve legitimacy, avoid meaningful change, and distract attention from the (environmental) contradictions of modernity. Such continued strategies of displacement are "dysfunctional long-term tendencies" which render advanced capitalist states like the U.S. "a profound threat to global security" (Hay 1994: 227).

In line with the environment-conflict literature discussed in chapter 6, U.S. environmental security policy-discourse interprets the environment as a direct or indirect threat to U.S. interests. Talking in terms of threats in this way conflates

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[30] Hay's paper is a remarkable insight into the politics of environmental security. He understands environmental security to be the intuitive goal of securing the environment. Remarkably, he makes no reference to any work which could reasonably be said to be part of the environmental security literature. Further, he seems completely unaware of any of the U.S. government's initiatives.

environmental problems with military problems. This is an inappropriate way to understand environmental problems, particularly given that 'threat' in security discourse is a potent symbol of deliberate and malignant danger to the inside emanating from the outside. In this respect the environment is scripted as another danger which helps constitute the sense of 'Us' necessary for nationalism and state legitimacy. Talking in terms of global threats blurs the distinctions between subject and object and cause and effect in ways that obscure the U.S's complicity in environmental degradation.

Talking in terms of threats is a discursive tactic that simultaneously downgrades the interdependence of environmental problems whilst excluding from consideration the role of U.S. businesses, consumers and government in generating environmental problems. Campbell is succinct about this discourse of threats and Others:

> One of the effects of this interpretation has been to reinscribe East-West understandings of global politics in a period of international transformation by suggesting that the 'they' in the East are technologically less sophisticated and ecologically more dangerous than the 'we' in the West. This produces a new boundary that demarcates the 'East' from the 'West' in the period when the old frontiers of identity are no longer sustainable. But environmental danger can also be figured in a manner that challenges traditional forms of identity inscribed in the capitalist economy of the 'West'. As a discourse of danger which results in disciplinary strategies that are deterritorialized, involve communal cooperation, and refigure economic relationships, the environment can serve to enframe a different reading of 'reasoning man' than that associated with the subjectivities of liberal capitalism, thereby making it more unstable and undecidable than anticommunism (Campbell 1992: 197).

It is precisely these implications of deterritorialization, communal cooperation and refiguring economies that threaten the U.S. security elite, and so which are denied and excluded in U.S. environmental security policy-discourse.

Another failing of the 'threat' discourse is that it focuses attention on issues "only when crises are imminent, by which time it is often too late for effective interventions and corrective measures" (Dabelko and Simmons 1997: 142). This is an example of what Prins calls the 'environmental catch-22'; by the time environmental problems are unambiguously overt it is too late to rectify them, yet unless the problems are immediately pressing there is insufficient motivation for action by mainstream political institutions (Prins 1990, 1993a). Thus the particular interpretation of environmental security by the U.S. policy community ignores a telling implication of environmental problems for politics - that is that long term

and fundamental reforms are required to address the underlying structural causes of environmental degradation.

Underwriting this presentation of environmental problems as threats is a recurrent conflation of threat with risk. Environmental security in this sense represents the state's particular and highly politicised assessment of risks rather than any scientific account of them. There is little correlation between the two. The U.S. government's assessment of risks is far less a matter of credible scientific assessment and far more a matter of the politics of identity and Otherness. Thus "the response of individual states to environmental pathologies is often determined by contingent political factors as opposed to informed risk assessments" (Hay 1994: 226). The challenge for the environmental movement, according to Hay, is "not only to continue to provide such informed risk assessments, but also to expose the distortions imposed by the state's own consequence-risk calculus" (Hay 1994: 226). This chapter has sought to help expose these distortions.

Underwriting current U.S. initiatives and pronouncements on environmental security is a resistance to meaningful change and a defence of the status quo. As Dalby notes, "in so far as security is premised on maintaining the status quo it runs counter to the changes needed to alleviate many environmental and economic problems because it is precisely the status quo that has produced the problems" (Dalby 1994b: 33). The U.S. government's response to environmental security is not the new foreign and security policies we might have expected to flow from the concept of environmental security, rather it has responded with the usual approach to foreign policy based on the usual Realist inside/outside rationality. For the U.S., environmental security is about securing the very lifestyles and institutions that degrade the environment against the risks associated with this same degradation. This is a paradox lost on most, and a dangerous and counterproductive outcome which cannot be ignored by any proponent of environmental security. Thus President Bush's comment at Rio in 1992 - that the lifestyle of the U.S. is not negotiable - still holds true.

The U.S. environmental security policy-discourse does not help to minimise the causes of environmental insecurity, indeed it seems fundamentally implicated in their perpetuation. It also does not recognise that fundamental long term changes in the structure of the global political-economy are required, and it does

not recognise that if any single country needs to implement this reform, it is the U.S. itself. Instead, it holds to a singular belief that the best way to secure against threatening Others is to prepare for war; the irony in this strategy of securing against violence by advocating violence is by now well known. But, as will be discussed in the following chapter, preparing for war is a significant cause of the very environmental degradation the U.S. military finds so threatening, and so the outcome of this Realist-infused environmental security discourse is a continued spiralling downwards of the interrelated problems of direct violence, structural violence and environmental insecurity.

There are, at least, two principal positive features to the U.S. environmental security policy-discourse. First, that environmental concerns now figure in national security reasoning suggests that the U.S. policy community is at least attentive to environmental concerns, even if it interprets them in overly narrowly and parochial ways. Perhaps the most valuable function of the U.S's inclusion of environmental security into policy is that it creates a common point of dialogue between environmentalists and national security planners. The incorporation of environmental security into U.S. foreign policy therefore serves an extremely important epistemic function which offers the possibility of a more benign and environmentally effective foreign policy.

The second positive aspect of the U.S. environmental security policy-discourse is that there is a discernible shift in both the NSS and the work of the State Department towards a more sensitive and benign understanding of environmental problems. Between 1996 and 1997 the NSS dropped a number of references to environmental degradation as a threat, and has downplayed the possibility of environmental degradation leading to violent conflict. The NSS now recognises the need for non-coercive forms of diplomacy and the ratification of existing international conventions and treaties. Over the same short period the State Department has also developed a more sophisticated approach to environmental problems, and has downplayed the inside/outside theme which has traditionally underwritten U.S. engagement with the world. However, there is a danger that the self-congratulatory, vague and militaristic interpretation of environmental security by the Pentagon will counteract these small positive gains made by the NSS and the State Department.

7.4 Conclusions

This analysis of U.S. environmental security policy-discourse has shown that there are real dangers in linking environmental security to the concept of national security. The most pressing danger is that Realism and the military appropriate the concept to advocate business as usual. However, despite the fundamental problems that arise from associating environmental security with national security, the concept should not be completely divorced from the national referent. As was shown in section 2 of this chapter, there are at least some valid connections between environmental degradation and the national interest; although the implications of making these connections needs to be carefully considered. The issue is one of degree and emphasis. In short, while there is no doubt that environmental security is highly problematic when viewed solely in national terms, there is equally no doubt that the nation-state has an important role to play in acting for the betterment of the environment and the environmentally insecure because the nation-state is not likely to soon disappear from the political landscape. The concept of environmental security therefore needs to be conceptualised in such a way that non-national - particularly human - referents take precedence over the national referent. In such a conceptualisation national policy becomes the means to secure *people* rather than the means to secure the state. An alternative and human-centred environmental security concept and its policy implications are developed in chapters 10 and 11 (Part III of this thesis). Before this, there is a need to expand on the linkages between the military and the environment, and the difficult problem of what to do with the military. This is the subject of the following chapter.

Chapter 8. Military-Environment Linkages

8.1 Introduction

A significant amount of the environmental security literature considers the linkages between the traditional agents of security - the military - and the environment. This can be a source of confusion at times; because in most countries the military is integral to security policy, talking about environmental security frequently leads *ipso facto* to consideration of the role of the military.[1] It is important to remember though, that security is not merely about nations, and that the military is only one - albeit an immensely powerful - institution that allegedly provides security. It is this immense power that necessitates an examination of the links between the military and the environment.[2]

This chapter seeks to examine the links between the military and environmental issues by looking at three principal connections. First, there is the connection between warfare and environmental degradation. Second, there is the connection between preparation for warfare (the day-to-day business of the military) and environmental degradation. These first two rather uncontentious categories will be briefly discussed in turn. Third, there is the connection between militaries and the potential for them to assist in the recovery and protection of the environment. This complex and difficult issue is given relatively little attention in the literature, and so receives the most attention in this chapter. A case study is presented of the potential for Australia's military forces to assist with environmental recovery and protection.

8.2 War and the Environment

Warfare leads to environmental degradation; "deliberate 'scorched earth' tactics have been part of the military repertoire since classical antiquity at the very least" (Stern 1995: 221). In recent times the use of defoliants in Vietnam (Westing 1976

[1] The term 'military' is used in this chapter, and indeed this thesis, to denote the armed forces as well as the defence bureaucracy and the military-industrial complex; therefore 'military' denotes the general sector which is devoted to war-fighting.

[2] This chapter is based on Barnett 1996b and 1998a.

and 1980), and the burning of oil wells in Kuwait (Ramachandran 1991), have demonstrated that war has significant environmental consequences. Environmental degradation is a legacy of war that is manifest long after the last shots are fired (Seager 1993: 16). Because warfare is precisely about the destruction of life, it is axiomatic that it also damages the environment. Nevertheless, any evidence that highlights the negative effects of warfare serves the interests of peace.

Environmental degradation can be an unintended outcome of war; the 'nuclear winter' that would likely result from a nuclear war is a classic example. The environment can also be deliberately manipulated as a military strategy. There is more to this than targeting certain facilities (such as nuclear power plants, dams and oil pipelines) to degrade an opponent's operational environment and natural capital.[3] The deliberate destruction or manipulation of the environment has more "elegant" forms as well (Westing 1997: 145). Among these more 'elegant' forms, the release of harmful micro-organisms is one strategy that it is not difficult to imagine being deployed in warfare. Indeed, this is the function of biological weapons which might disperse, for example, the anthrax virus; biological warfare is the dark side of microbiological research. Other more 'elegant' forms of warfare include seeding clouds to induce rainfall, and the dispersal of unspecified substances into the troposphere to hamper the effectiveness of radar (Westing 1997). Westing goes as far as to imagine that "it may become possible to temporarily disrupt the ozone layer above enemy territory for the purpose of permitting injurious levels of ultraviolet radiation to reach the ground" (Westing 1997: 147).[4]

There is a considerable amount of literature that addresses the international agreements and cultural norms required to limit degradation of the environment in times of war and not-war (for example Lorenz 1994, Westing 1984, 1986b, 1988a). The partial Test Ban Treaty which sought to minimise fall out from atmospheric nuclear tests is an early example of efforts to reduce the environmental impacts of military activity (Stern 1995). Other existing treaties include The Outer Space Treaty, The Sea-Bed Treaty, The Biological Weapons

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[3] Gleik's "resources as strategic targets" (1990: 510) - see chapter 6.

[4] Westing has dominated this field of study and it is difficult to assess the intent of his work. Certainly he does not seem enamoured with the military and national security; he is a 'peace researcher' with a liberal-institutional IR emphasis on rule of law and regime building. However, the military surely does not need any assistance with its "fantasies about new ways to wage war (Westing 1997: 145); the link between imagination and happening is no more dangerous than this.

Convention, The Threshold Test Ban Treaty, and the Environmental Modification Convention (El-Hinnawi and Hashmi 1982: 26-27). In that all rules of military engagement are for the most part ineffective given that war is far from a civilised and organised event, this approach is perhaps less useful than the promotion of common and comprehensive security which addresses the meta-problem of warfare itself (see chapter 5).

8.3 Preparing for War and the Environment

In addition to having significant environmental impacts in times of war, military activities in periods of not-war are also environmentally degrading. When not fighting wars, militaries are preparing to fight the next war. There is thus a state of continuous low intensity warfare with cumulative environmental impacts. The landmark paper on this subject is Renner's *Assessing the Military's War on the Environment* (1991). Renner identifies numerous ways in which military activities degrade the environment. These include the use and degradation of land, the pollution and use of airspace, the use of energy and material resources, and the generation of toxic wastes.

Modern armed forces require large amounts of land for training. For example, the U.S. DOD controls 25 million acres of land (Perry 1995), and the Australian Department of Defence controls 3.6 million hectares (making it the largest land holder of any Commonwealth Government department) (Cooksey 1988). With advances in weapons technology these requirements increase (Renner 1991). The irony is that "in the name of defending a nation's territorial integrity ... larger and larger areas are given over to the armed forces, effectively withdrawing them from public access" (Renner 1991: 134). Some militaries use the land of other countries for training. For example, in the 1980s the U.S. military was the largest holder of agricultural land in the Philippines (Renner 1991: 135). Seager notes that there are more than 3,000 military bases located on foreign soil, and that "if anything, the environmental record of militaries operating on foreign soil is worse than home-based military operations" (1993: 57).

Weapons testing is a major cause of land degradation. In Australia, for example, the Port Wakefield weapons testing area cannot be used for alternative purposes as a result of unexploded ordinance accumulated over some 50 years of

testing (Social and Ecological Assessment Pty Ltd 1985). Military contamination of land is most extreme where nuclear weapons have been involved. The U.S. nuclear weapons program was conducted in thirty-four states and covered 2.4 million acres of land; clean up costs are expected to be in the order of US$2-300 billion (Dycus 1996: 5). In Australia, British nuclear weapons tests at Maralinga and the Monte Bello Islands have rendered these area uninhabitable (DPIE 1990). In the South Pacific, whole islands remain uninhabitable as a result of U.S. and French nuclear weapons tests (Siwatibau and Williams 1982, Seager 1993).

The manufacture and storage of nuclear and chemical weapons, and the storage and improper disposal of fuel, paints and solvents generates significant amounts of toxic waste on military sites. The former Soviet Union, for example, has dumped up to 17,000 containers of nuclear waste and up to 21 nuclear reactors into the Barents and Kara seas (Heininen 1994: 156); and the U.S. military generates more toxins than the top five U.S. chemical companies combined (Renner 1991: 143). Seager lists 26 U.S. military bases with significant toxic hazards, and cites a clean up figure of US$400 billion (1993: 34-35). Ackerman notes that there are some 14,000 U.S. Army, Navy and Air Force sites which require some degree of clean up (1990: 37); later estimates put this figure at 25,000 potentially contaminated sites (Siegel 1996: 15).[5] So, "if every military-blighted site around the world were marked on a map with red tack-pins, the earth would look as though it had measles" (Seager 1993: 14).

The use of airspace for military aircraft is a significant environmental hazard. Renner notes that "an F-18 jet flying at supersonic speed for 10 minutes ... can 'boom' an areas of more than 5,000 square kilometres" (1991: 136). The intense noise generated by military aircraft negatively impacts on human health and ecosystem integrity (Seager 1993).[6] Flight training in the U.S. is conducted on the territories of 14 Native American nations, which suggests that not all people are secured when national security is procured through the military. Thus "in the name of defending one society's freedom and life-style, another's is

[5] The U.S. military has for a long time been able to pollute without hindrance by hiding behind the shield of 'national security' (Finger 1991, 1994). However, as discussed in chapter 7, it is slowly being brought to task, although the response thus far has been less than sufficient, and the pressures from Congress are waning. In times of war militaries are likely to be exempted from even the minimal environmental standards that operate in periods of not-war (Finger 1991).

[6] The recent collision between a low-flying U.S. military jet and a cable car in Italy has highlighted the ongoing problems of military training, even in the post-cold war era when the need for a U.S. presence is Europe is less than obvious.

compromised" (Renner 1991: 136). Indeed, traditional cultures frequently suffer from military activity; to note but one example, during the Kangaroo 95 military exercises held in Northern Australia a Leopard tank drove through, and damaged, an Aboriginal sacred site (Alcorn 1995).[7]

Militaries use massive amounts of energy and other resources. The worldwide use of aluminium, copper, nickel, and platinum for military purposes exceeds the net demand for these materials in the all the industrialising countries (Renner 1991: 140). One quarter of all the world's jet fuel is consumed by military aircraft (Renner 1991: 137). Renner figures that the U.S. military-industrial complex may be responsible for at least 10% of the United States' total CO2 emissions, which makes the U.S. DOD responsible for some 2-3% of total global emissions (Renner 1991: 139). The U.S. DOD therefore emits more CO2 than all of Canada, or more than all of Australia, Finland, Sweden and New Zealand combined (after UNDP 1996: 206). On the basis of rough estimates, Renner concludes that the world's militaries use the same amount of petroleum products as Japan - the world's second largest economy (Renner 1991: 138). A recent release from the Australian Ministry for Defence gives the following annual fuel costs for Australia's various weapons platforms: F-111 aircraft - A$8 million; F/A-18 aircraft - A$19 million; DDG destroyers - A$19 million; and FFG frigates - A$15 million.[8] The total annual fuel bill for operating Australia's eight major weapons platforms is A$48.6 million; to compare, Federal funding for renewable energy research and development is A$16 million (Parer 1998).

The environmental legacy of military activities works in other less direct ways as well. The social impact of military bases is important. Enloe (1990) and Seager (1993) have both documented the extremely disruptive effects of military bases on local communities; an effect which is more pronounced in industrialising countries and in places with non-Western cultures. Seager argues that there are strong linkages between a foreign military presence, exploitative prostitution, sexist socioeconomic segregation, and the deterioration of public safety and the environment. The generation of poverty by undermining traditional livelihoods

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[7] According to Sharp, Australian Army training areas are potential "cultural heritage islands" (1994: 44). The evidence for the preservation of cultural heritage in Australian Defence Force training areas is actually more ambiguous than Sharp suggests. In many of these sites traditional owners have limited access, so *whose culture and for whom?*

[8] This information was passed on via the Australian Coalition to Reduce Military Spending. The initial communique was issued by Peter Jennings (consultant) on behalf of the Minister for Defence on April 4 1997.

and supplanting them with a largely prostitution based economy, as in the Philippines for example, has significant ramifications for ecological and social sustainability in these areas. The other great (and perhaps most pervasive) impact of militaries everywhere is the dissemination of a militarised masculinity which propagates itself in a culture that glorifies violence and denigrates peace (Enloe 1990).

A final negative aspect of military activity is that it displaces expenditure on programs to improve social and ecological sustainability (Gleditsch 1994). As U.S. President Eisenhower noted: "every gun that is made, every warship fired, signifies in the final sense a theft from those who hunger and are not fed, those who are cold and not clothed" (cited in Seager 1993: 41). Some comparisons illustrate the point:

> [F]or the price of one British Aerospace Hawk aircraft, 1.5 million people in the Third World could have clean water for life; ... the money spent on one nuclear weapons test could provide installation of 80,000 hand pumps to give Third World villages access to safe water; the money needed to supply contraceptive materials to women around the world already motivated to use family planning is the equivalent of 10 hours of global military spending;... in ten days of the Persian Gulf War, the US military spent the equivalent of the entire annual domestic budget for energy development and conservation (Seager 1993: 41-42)

In this sense, environmental security implies redirecting military expenditure.

In short, the world's militaries are most probably the single largest source of environmental degradation because:

> Whether at peace or at war .... Militarized environmental destruction is more global, more ubiquitous, and more protected than the actions of even the most flagrantly irresponsible multinational corporations or governments (Seager 1993: 15)

This raises serious questions about the third kind of military-environment linkage - that militaries can play a positive role in environmental protection and recovery.

8.4 A Positive Contribution?

Because the military is the principal agent of national security, understanding environmental degradation as a security issue implies a role for the military beyond being involved in (questionable) environmentally induced conflicts (see chapter 6). Besides being required to take care of its own environmental impacts (as discussed in chapter 7), there are a number of potential roles for the military: it

can assist with the enforcement of environmental standards; it can, along with intelligence agencies, monitor and collect information about environmental degradation; and it can be deployed in broader non-coercive roles to help with environmental conservation and restoration. This section seeks to consider these roles in turn. This issue of a potential positive role for the military is not uncontentious. In many ways it crystallises the difficulties of the concept of environmental security. These difficulties will also be discussed.

8.4.1 Coercive roles

Given that militaries have traditionally used force to achieve a desired outcome, it is inevitable that some authors have advocated military enforcement of certain environmental goals. For example, Julian Oswald (former First Sea Lord of the United Kingdom) envisions a "traditional coercive task" for militaries, including enforcement of international law at sea (1993: 129). Further, in that there is much speculation about environmentally induced conflicts, there is also a latent suggestion that militaries may be embroiled in such conflicts (Hughes 1997). For Elliott, this line of logic suggests that "defense forces might engage in defensive or preemptive action in cross border resource conflict, act as agents of internal repression in the case of environment-related instabilities, or be used to 'secure' borders against environmental refugees" (Elliott 1996: 162). The possibility of a U.N. sanctioned green police force (like that of the peacekeeping force) also implies a coercive role for militaries (Schrijver 1989).

There are numerous military-to-military programs which involve transfers of technology and training for civil and environmental policing activities. For example, the U.S. Security Assistance Program has been involved in assisting some African countries manage the problem of illegal fish and wildlife poaching (Butts 1994). The Pacific Patrol Boat Program operated by the Australian Navy performs a similar function in the South Pacific (Bergin 1994). These programs operate in the grey zone between military and non-military threats to security, yet they nevertheless entail responding with military means. This can lead to a paramilitarisation of environmental regulation.

Invoking this traditional military reasoning "redefines environmental security as an environmental defense debate" (Elliott 1996: 163). These coercive roles are a reactive and short term response that does not deal directly with the underlying causes of environmental degradation. Byers explores the possibility of

a coercive role for the military in biodiversity protection, and concludes that "shooting poachers and illegal loggers is [not] a good idea ... as usual with violent means, the means may corrupt and compromise the ends" (Byers 1994: 125). Byers' most persuasive point is that locally derived solutions will always be more effective and long lasting that externally imposed ones - particularly when those impositions involve the use of force. Thus he argues that "a long-term solution requires ecologically sustainable economic alternatives for local people" (Byers 1994: 125). Aside from being a reactive, short term, and ineffective policy response, the greatest problem with the use of military power to force environmental compliance is the way it enables the military to colonise environmental issues. It also justifies the maintenance of armed forces. If the concept of environmental security induces the cooptation of the environmental agenda in the way that it has in the United States (as discussed in chapter 7), then actively *encouraging* coercive military engagement with environmental problems is likely to lead to 'ecofascism' (Adams 1990 - cited in Byers 1994: 111). Military force will not help overcome environmental insecurity.

8.4.2 Intelligence and surveillance

A more benign suggestion is to use military and intelligence agencies to assist with analysing, predicting, monitoring and ameliorating environmental problems (Dabelko and Simmons 1997). Oswald calls this a 'precautionary role' (1993: 118).

There have been a number of environment-related programs involving the U.S. Department of Defence and intelligence agencies. These are for the most past reconnaissance missions. For example, in 1993 the U.S. Navy allowed non-military scientists to use the classified Integrated Undersea Surveillance System to track whales in the Western Northern Atlantic ocean (Thomas 1997); the extension of the military designed Global Position System into civilian use has also had significant benefits for environmental science; and in 1995, 800,000 of the U.S's earliest satellite photos were de-classified and released for public scrutiny - largely for the purposes of environmental monitoring (Thomas 1997).[9] In Australia, the work of the Navy Hydrographer in charting the coastline is arguably a function which assists in environmental monitoring and assessment (Leech 1996).

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[9] This satellite data was produced by now obsolete systems (Thomas 1997).

Intelligence agencies are important in this information gathering process (Smith 1996). The Director of the U.S. Central Intelligence Agency talks about 'environmental intelligence', and is extremely revealing as to its purposes:

> Much of the work that now falls under the environmental label used to be done under other names - geography, resource issues, or research. For example, we have long used satellite imagery to estimate crop size in North Korea and elsewhere. This allowed us to forecast shortages that might lead to instability and to determine the amount of agricultural production a nation would need to import - information valuable to the U.S. Department of Agriculture and to America's farmers. We have also tracked world availability of natural resources, such as oil, gas, and minerals..... Environmental intelligence will also be a part of our support to economic policymakers. They need to know, for example, whether or not foreign competitors are gaining a competitive advantage over American business by ignoring environmental regulations. (Deutch 1997: 114).

If we decipher the conflation of foci and function, it seems that Deutch is admitting that the U.S. uses its satellites to monitor global agricultural production and then to modify domestic output and target markets accordingly. This makes a further mockery of the idea of a 'level playing field' in global trade and the attendant neo-liberal abstraction that all rational economic actors have equal access to information in the market. The most deplorable irony, however, is that the same technology that confers this advantage will be used to enforce the environmental standards that are only tenable in industrialised economies. In effect, the U.S. presses it information advantage for the purposes of profit whilst ensuring that it maintains authority in the affairs of other states under the ambit of environmental monitoring. Deutch understands non-compliance to be important only in so far as competitors might gain an 'advantage', which reinforces the point that environmental intelligence for the U.S. is wholly subservient to the main function of intelligence in the post-cold war globalising economy - that of maintaining comparative advantage.

The CIA is working with EPA to combat black market trade in ozone depleting chloroflourocarbons, and the U.S. intelligence community also monitors illegal driftnet fishing (Dabelko and Simmons 1997). A particularly interesting program is the Global Fiducial Data Program which uses high resolution spy satellites to collect data about environmental change (Thomas 1997). This program is coordinated by the CIA and administered by the National Reconnaissance Office. A key feature of this program is that the data is to remain secret in order to conceal the U.S's reconnaissance capabilities (Deibert 1996, Thomas 1997). This enclosure of information renders it virtually useless for the peaceful resolution of

environmental problems. Instead, it gives the U.S. a privileged and exclusive monopoly of knowledge, the use of which will always be suspicious. Thomas (1997) suggests that most of these 'dual use' strategies are secrecy preserving and that this secrecy will serve more to protect the security establishment rather than serve environmental interests. Deibert is close to the mark when he says that:

> Should the military cooptation of environmental satellites continue, there is a real possibility that the military will become a clearing house for environmental data, with all of the attendant problems associated with its deeply ingrained secrecy culture (Deibert 1996: 31).

So if there is to be any information contributed by military and intelligence agencies, this information must remain accessible by all for it to affect a positive environmental outcome.

A more reasoned but cautious argument in favour of intelligence agency involvement in environmental problems comes from Dalby (1995). Dalby argues that intelligence agencies have a mandate to think about long term threats to security. He argues that a positive contribution might involve monitoring the state of renewable energy technologies, and predicting future effects and analysing evidence about environmental change, possibly using 'worst-case' reasoning (which would be consistent with the precautionary principle).[10] Dalby suggests that this new intelligence function would mean that different sources - such as *Vital Signs* and *World Resources* - would become the new references for intelligence analysts. He also suggests that the privileged position of intelligence analysts in the security policy community might enable them to promote positive and long-term policies. Dalby suggestions are welcome because they seek to change the practice of national security. Indeed, any serious non-Realist security project is obliged to suggest ways to overcome the reticence of the security establishment to change. This subject of constructive engagement with the security establishment is fraught with danger and there are no easy answers; the remainder of this chapter tackles this difficult subject.

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[10] The precautionary principle applies "where there are threats of serious or irreversible environmental damage", and it holds that "lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation" (Commonwealth of Australia 1992b: 8). O'Riordan and Jordan explore the implications of the precautionary principle: "precaution challenges the established scientific method; it tests the application of cost benefit analysis in those areas where it is undoubtedly weakest (ie. situations where environmental damage may be irreversible or potentially catastrophic); it calls for changes to established legal principles and practices such as liability, compensation and burden of proof; it challenges politicians to begin thinking through longer time frames than the next election or economic recession" (O'Riordan and Jordan 1995: 193).

8.4.3 Civil defence and non-core roles

Militaries often have civil defence functions:

> Military units are commonly allocated rescue and disaster relief missions, which may involve responding to natural cataclysms (such as earthquakes, floods, volcanoes, hurricanes, and so on) or to technological catastrophes with serious environmental consequences (such as nuclear accidents or oil spills). Military engineering and medical capabilities, transportation infrastructure, logistical readiness and organizational discipline suggest that the military is well suited for such missions (Stern 1995: 222).

It could also be argued, as Dycus (1996) does, that the U.S. Army Corps of Engineers makes a positive contribution to environmental protection by building water-resource infrastructure (this is questionable). In Australia, the most significant funding and research conducted on hazards and emergency management occurs under the auspices of the Department of Defence.[11] These civil defence functions are non-coercive and have little effective training function for the military. Therefore these are ostensibly non-military functions.

These civil defence functions serve as an important precedent for a third kind of positive contribution from the military - the application of the military to non-military environmental tasks. Militaries generally have some unique characteristics that make them useful for dealing with environmental problems; they are well organised, large scale, well resourced, and located in most areas of most countries (Butts 1994: 84). It is the contention of this thesis that the military should be involved in environmental protection and restoration. This is made on the basis of a broad interpretation of national security which understands environmental degradation to be a risk to national security (chapter 7). Further, addressing this problem is the responsibility of government and all government agencies. The qualification is that the military should participate in non-coercive ways, and should not operate beyond its own nation's borders. In addition, any activity should be unclassified, including any information collected. This proposition will now be grounded by applying it to Australian defence and security policy.

8.4.4 A positive role in Australia?

The Australian Defence Mission is "to promote the security of Australia, and to protect its people and interests" (Commonwealth of Australia 1996b: 1). As has

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[11] The Department of Defence funds the Australian Emergency Management Institute at Mt Macedon, Victoria.

been shown in chapter 7, environmental degradation does threaten Australia's 'security', 'people and interests' in important ways. A broad interpretation of the Defence Mission therefore suggests that the Australian Defence Force's contribution to society has been overly narrow, and that there is a need to redefine the role of the military in light of widespread domestic environmental degradation. So, as environmental degradation increases, a policy of expanding the military's involvement in environmental protection and restoration becomes increasingly relevant.

There are important precedents for this proposal. The Australian Defence Force (ADF) has already made a worthwhile contribution to Australia's environment by managing its own affairs in an environmentally responsible manner (Crabb et al 1996). Of particular importance is the biodiversity value of well managed defence estates. For example, a recent public inquiry into the Army training area at Shoalwater Bay determined that the ecological integrity of the site has improved during the Army's period of tenure (Commonwealth Commission of Inquiry into Shoalwater Bay 1994, Johnston and Darlington 1994). There is therefore some in-house competence and familiarity with environmental problems that can serve as a foundation from which the Australian Defence Forces can develop a more proactive environmental program.

The Australian Defence Forces have made positive contributions to the environment in ways that go beyond traditional military roles, examples of this include: Army provision of water purification equipment (Canberra Times 1991); participation in 'clean up' days (Ballarat Courier 1990, Herbert River Express 1990, Richards 1991); and the use of soldiers for marine fauna surveys (Twin Cities Advertiser 1990, Commonwealth of Australia 1995). Although these contributions to local and regional environmental operations occur on an ad-hoc basis, they are nevertheless indicative of the practical application of the ADF to environmental problem solving.

Resistance?

As with any challenge to the status quo, resistance to the proposal to involve the military in environmental action can be expected. In a related exploration of resistance to change, Cheeseman identifies two likely sources of opposition to this proposal (Cheeseman 1995). The first is of an ideological nature, namely that Australian defence discourse is incapable of considering alternative conceptions of

security as these challenge state authority and the assumption of the need for military might in an (uncritically presumed) anarchic world. Thus an ideological shift is required. The second source of opposition is related. Alternative security policies would make explicit the recognition of the multidimensional nature of security in the post-cold war world. This would radically change the business of the ADF, and fundamentally challenge the expertise and authority of existing defence policy makers:

> The incantation that Australia should structure its armed forces solely for the defence of Australia helps block out these kinds of nagging questions and their implications. It is part of the strategists' realist agenda of translating Australia's new and complex environment into a more familiar form which continues to privilege their own world views and positions of power, and can be used to marginalise and ignore alternative theoretical concepts and prescriptions (Cheeseman 1995: 10).

Thus the suggestion that the Australian defence establishment adds environmental protection and restoration to its core agenda will meet with substantial ideologically and pragmatically driven resistance. Overcoming this resistance requires developing detailed proposals that promote environmental objectives at the same time as offering some return to the ADF for its involvement (most probably in the form of improved public relations, but this should not be given freely). Overcoming this resistance also requires continued challenging of the meaning and practice of security.

Environmental groups may also resist the prospect of military involvement in environmental management - for good reason given the experience in the U.S. thus far, and given the extensive environmental damage militaries create. These concerns will be discussed more fully later in this chapter. However, for now it is necessary to note that whatever environmental programs the military might be involved in, these must be practical, domestic and non-coercive. The following discussion explores the idea of a surveillance network in Northern Australia which would be beneficial for the environment of the region, and which would offer enough inducement for the ADF to participate.

'Defence in depth': Northern Australia

It is in Northern Australia that there is the most potential for a significant contribution from the Australian Defence Forces to environmental protection and restoration. Northern Australia is defined as the area between Cairns and Broome. This is the area of direct military interest for current Australian defence policy; however, it is of crucial importance for environmental, economic, social and

cultural security as well. Northern Australia contains vast tracts of unique wilderness areas, making it vital to Australia's natural heritage. Preserving the ecological integrity of the region would be environmental security in its purest interpretation (see the following chapter on ecological security). The region is also vital to Australia's cultural heritage as it is an area where traditional Aboriginal culture has been (relatively) least disrupted. Furthermore, throughout the region there are large areas of Aboriginal land which are environmental, social, political and economic assets to all Australians.

The environment of the region is at risk, and many of these risks have already materialised (unlike highly subjective military risks); the outbreak of the papaya fruit fly in 1996 was only the most recent of many ecological invasions which have had negative environmental (and economic) consequences. Northern Australia is a zone of transboundary environmental traffic. The region is a major and the most proximate gateway between Australia and Asia; it has a large volume of people, flora and fauna flowing across its borders. With this volume of traffic, both official and unofficial, comes the importation of harmful biological organisms. Although this is also true for Australian airports and ports, Northern Australia is the most problematic of these high risk areas as the coastline is over 6,000 kilometres long and most of it is sparsely populated and has little infrastructure (Wolfe 1995). This makes adequate coverage of the area, for whatever purpose, exceedingly difficult. In terms of biological organisms, the smuggling of native fauna, illegal immigration and drug trafficking, there is currently no comprehensive monitoring system in place. Even in military security terms, despite being the focus of extensive effort, Northern Australia continues to be virtually indefensible against low intensity threats (Evans 1990).

Australian defence policy currently adopts a layered approach (defence in depth) to the surveillance of the sea-air barrier and inshore areas of Northern Australia (Commonwealth of Australia 1994). At present, ADF activities in Northern Australia do little for the environmental security of the region, but there is much potential for a convergence of activities to address these not dissimilar interests. The best strategy would be a multi-purpose, coordinated and comprehensive surveillance and monitoring system. Such a system would integrate civilian and military communication, transport, and aerial infrastructure, in conjunction with local communities, to look for signs of environmental disturbances such as new species of weeds and wildlife smuggling. This would be

impossible in the near term without the involvement of the Australian Defence Forces. Involvement in a comprehensive, wide area surveillance network would be an ideal first step towards an environmental component to the Australian Defence Force's corporate goal. It would contribute positively to Australian security in every respect. Such a program might also enhance employment and welfare in Aboriginal communities in the region; the Army already has a working relationship with many Aboriginal communities (Ball 1991a, Millie 1995).[12] Any information gathered by such a network must be made publicly available.

This brief case study has sought to show how the Australian military can expand its involvement in environmental protection and restoration in a useful way. It has sought to show how a policy to involve the ADF in environmental protection and restoration can be operationalised. The implementation of such a policy needs to be carefully steered by environmental groups and other stakeholders. Nevertheless, as chapter 7 has suggested, this is a dangerous idea so further discussion is warranted.

8.4.5 Counterarguments

Arguments against military involvement in environmental issues come from two vastly different perspectives. From the traditional security camp there is resistance to any expansion of military activity lest it undermine war-fighting ability. According to Cohn (1996), Republicans in the U.S. Congress, and military leaders, are opposed to non-military functions as these divert time and resources away from core functions. Dabelko and Simmons summarise this case:

> A more traditional security perspective argues that the armed forces should not sacrifice operational readiness for involvement in non-traditional activities like environmental protection. Time and resources expended to monitor environmental treaties and to perform other environmental tasks detract from the military's primary mission (Dabelko and Simmons 1997: 138).

This counterargument seeks to preserve the sanctimony of national security and the military. However, it should by now be apparent that this sanctimony warrants destabilisation (for the many reasons that this thesis has discussed thus far). Given this resistance to change, there appears to be at least some merit in the argument

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[12] The relationship is not as harmonious as it might be. A recent initiative to employ Army engineers to develop water and sanitation infrastructure was welcomed by some indigenous Australians, but regarded indifferently by others because there was insufficient prior consultation with the communities involved (Kitney and Scott 1996, Windsor 1996). The lessons from this process must be learned before any further initiatives - such as that proposed here - be implemented.

that militaries should be involved in environmental protection and restoration *if for no other reason than the security elite finds it problematic.*

The second counterargument against military involvement in environmental protection and restoration is less easy to dismiss. For most environmentalists, the prospect of military involvement in environmental protection and restoration triggers a sense of unease. This is in part due to the intuitive baggage that accompanies environmental sensibility; environmentalism holds to values such as anti-authoritarianism, cooperation, social justice and peace - all of which are the antithesis of military culture and practice (Brock 1991, Deudney 1990). Further, given the extensive environmental damage wrought by military activity, it is valid to argue that "the military must be addressed as a cause and not a cure of global environmental problems", and that "in the long run, the industrial-military complex must be dismantled. This is the *sine qua non* for effectively dealing with the entire global environmental crisis" (Finger 1991: 225). Tirman agrees, adding that "applying military ideas and assets to environmental issues will solve nothing" (Tirman 1990: 19). This is undoubtedly true in principal.

A further danger in arguing for military involvement, even in the non-coercive way that this chapter has argued for, is that it may justify the continued existence of the military and intelligence agencies by giving them a *mission* (Deibert 1996). This seems borne out in the Deutch's observation that applying intelligence collection assets to environmental issues is relatively cheap and easy; therefore the environment serves as a further justification for traditional military and intelligence functions (Deutch 1997). In a similar vein, Ball (1992) has argued for a geosynchronous satellite in Northern Australia in part on the grounds that it can have an environmental monitoring function; but the ostensible function of this would be to assist in military operations in the area. Thus military and intelligence agency involvement in environmental protection and restoration may well be a pragmatic strategy designed to maintain current levels of funding for defence; a bureaucratic tactic designed to hedge against payment of the post-cold war peace dividend (Dabelko and Dabelko 1995, Finger 1991 and 1994, Dabelko and Simmons 1997).

These are all extremely valid concerns with which this thesis has much empathy. However, they are all negative in their implications in that they advocate a return to a situation before the concept of environmental security emerged. But if

the concept of environmental security is to have any positive effect, the question of what to do with the military must be addressed, not ignored; Westing's question - "how can the need for a military sector be reduced?" - is therefore salient (Westing 1988b: 156). Renner, too, is concerned that "a lasting peace cannot be built without dealing with the remnants of the war system" (1994: 12). Eckersley also supports this view:

> [S]imply documenting and censuring the multiple ecological sins of the military ... avoids the more difficult question of determining whether the military has *any* legitimate role in promoting national and global environmental protection. Perhaps some of the fog surrounding the concept of environmental security might lift with a tighter clarification of the proper role of the military... (Eckersley 1996: 143).

In this respect, Finger's reference to '*the long run*' (1991: 225 - see above) ignores the more immediate and pragmatic question of what to do in the short term. It is precisely this need for a short term strategy that careful and controlled military involvement in environmental restoration and protection might be able to satisfy. There is a temporal/transitional issue involved here:

> In the policy realm, it is probably most fruitful to focus attention on how existing institutions might alleviate the dangers environmental change poses to human welfare .... while continuing to explore the need for structural changes and our capacity to work towards a satisfactory relationship between society and nature. With this in mind, one concern is that we adopt a realist approach to the capacity of existing institutions (Matthew 1995: 68).[13]

The present response to the problem of what to do with the military takes two forms. First, it is simply ignored. Second, there is a focus on conversion, defined as the "reallocation of resources from the military to civilian purposes" (Luckham 1987b: 40); and added to by Renner: "conversion goes beyond a mere re-shuffling of people and money. It involves a political and institutional transformation" (Renner 1990: 157). While ignoring the issue obviously contributes nothing to the problem, the latter approach has produced negligible results. Conversion is a prescription for change based on high ideals rather than practicality; it does not seriously address the power of the military to resist change. The contention of this thesis, then, is that although fraught with problems, a policy to involve the military in environmental protection and restoration is an achievable and relatively non-threatening way of overcoming this sector's inertia. Byers seems to support this contention: "if the armed forces ... avoid overt violence wherever possible, they may become part of the process of conversion of military

[13] Leaving aside the description of such a strategy as 'realist'!

forces to civilian tasks" (Byers 1994: 126). Involving the military in environmental protection and restoration should be seen as a *transitional* step towards overcoming the structural causes of environmental degradation; to put it another way, it is a pre-conversion conversion. A danger of this policy proposal is that the military may colonise the environmental agenda, this can be averted by ensuring that a diverse array of interests (all stakeholders) are involved in steering its implementation.

The military's pragmatic use of environmental security to maintain relevance and legitimacy is a double edged sword. It is similarly pragmatic to involve the military given that a) environmental degradation is a challenge for *all* institutions, b) this is also an opportunity for biophysical scientists to gain assistance and resources, and c) it is an opportunity for peace researchers to "grasp in reality what had for so long merely been a quaint couplet in the minds of utopians - a chance to beat swords into plowshares" (Deibert 1996: 29).[14] Further, there is something to be said for involving the military in environmental protection and restoration because it is the most autonomous of government institutions, and hence the most difficult of all institutions to modify. There is a paradox here in that "the more important the military-industrial complex is within a country, the more likely it is that the nation-state will act as a protector of its military rather than as a protector of the biosphere" (Finger 1991: 224). So, involving the military in environmental issues is least likely to be successful in those places where its transformation is most necessary. But by the same token, the most resistant to change will be the most resistant to *any* initiative for change; so whilst Finger's point is well received, it does not suggest an alternative option for reform of the military. The option proposed here seems more probable and plausible than many others, particularly given a high level of public concern about environmental problems in many countries. Indeed, given the tendency of people to profess concern about environmental degradation but actually do little except expect government to take control, a policy to involve the military may well be extremely popular (at least in Australia).

[14] A further consideration is that any state that acts first can affect a flow-on by setting an example that other militaries may follow (Maddock 1995, Soroos 1994, Thomas 1997). If the U.S. were to take such a lead others would be sure to follow. Alternatively, a coalition of middle powers might, by their example, prove the possibility of a shift in military purpose and culture.

Such a policy has relevance in other countries; however, it is not universally applicable. The desired approach to military involvement in environmental protection and restoration is to operate on a case-by-case, country-by-country basis. The nature of military involvement in environmental protection and restoration in a totalitarian state, for example, would be patently different than in a liberal-democratic middle power such as Australia, or in a superpower such as the United States. There are marked differences in the complicity of various militaries, thus in practice the potential contribution of each would need to be assessed on a case-by-case basis. However, even in a totalitarian state characterised by military dominance of public life, it is possible that little would be lost were the military to engage in environmental protection and restoration; yet much could be gained if this were to result in even a slight shift in culture or a slight shift in energies away from repression. In some cases, then, military involvement in environmental management may be a valid strategy, in others it may be a recipe for disaster. It is important to note that the crucial consideration in such a strategy is not the potential environmental contribution a military can make, as it will almost always be a better environmental outcome if militaries were disbanded and resources redirected to social and environmental policies. The crucial gain comes from shifting an otherwise rigid, autonomous, and violent institution and culture.[15]

In sum, large and fundamental structural changes are required to achieve a more benign world, and so we need to keep an open mind when considering what each institution - including the military and perhaps most importantly the military - has to offer. The goal of sustainable development requires us to address the military's place in society. *Our Common Future* referred to the "institutional challenge" of sustainable development which means incorporating environmental issues into all sectors of society, public and private (WCED 1987: 354). This challenge is at its most difficulty when it comes to the military. Providing the military can be encouraged to participate (which the notion of environmental security may help affect), and providing this participation is conducted in a practically and ethically acceptable manner, then military involvement in environmental protection and restoration is a significant step towards structural

[15] This question of changing military culture is not unproblematic. This, too, is a component of U.S. DOD environmental security policy-discourse; and so should be treated with caution. But this should not obscure the need to do something. Even in the case of the U.S., ignorance and denial is not the most helpful response. Instead, a continued effort to engage the military to effect a genuine cultural shift, and ultimately conversion, is still required, however difficult this may be.

change. To reiterate, a vital caveat is that any military-environment program must seek to a affect positive environmental outcome, it must be of a non-coercive nature, and it must be restricted to action within the country concerned. Involving the military in environmental protection and restoration should be seen not so much as a definitive response in itself, but as a means towards a more desired institutional configuration for sustainability. It is a practically and symbolically significant mechanism for change.

8.5 Conclusions

This chapter has discussed the claim that militaries are a significant - if not the most significant - cause of environmental degradation in both times of war and times of not-war (it should be apparent that periods of not-war are not periods of peace). Further, in conjunction with chapter 7, it has argued that the military responds to the concept of environmental security in such a way as to maintain its privileged position as the guardian of national security. This is the recurrent and fundamental danger of the idea of environmental security. However, to argue against any role for the military, and to more generally argue against the hitching of environmental issues to the notion of security, is to avoid a significant and potentially rewarding site of conceptual and theoretical investigation. Furthermore, it is for the most part *too late* to avoid the connection of environment with security. Deudney (1990) and Brock (1991) were no doubt right to caution against these linkages. However, that the U.S. security establishment has taken environmental security on board invalidates the questions - *why?* - and - *why not?* - environmental security. This thesis contends that the question - *how can we contest and reclaim the concept of environmental security?* - is the one that critical scholars should now be seeking to answer. To ignore this question is to foreclose on the only strategy that can halt the colonisation of the environmental agenda by the security establishment. The notion of environmental security and the policy implications that flow from it must now be contested at every turn (hence this thesis).

A policy of careful and controlled military involvement in environmental protection and restoration is consistent with the linkage of environmental security to a broadly defined notion of national security. This policy must be accompanied by clear caveats, namely that any military role must be non-coercive, it must take

place within the nation concerned, and it must be considered on a project-by-project basis with the full cooperation and involvement of Green groups and local communities. Further, this is not a policy of generic validity for all nations in all periods of time; specific contexts must be taken into account. The fundamental goal of such a policy is not the continuation of the security establishment; on the contrary, it seeks its gradual conversion. This then, is one implication of the concept of environmental security that may, in the long-term, serve the interests of peace and human security. Alternative conceptions of environmental security are also required, and these will be discussed in the following two chapters.

Chapter 9. Ecological Security

9.1 Introduction

Chapters 5 to 8 have examined those approaches which are in various ways predominantly concerned with the security component of environmental security. Counterbalancing this, there is a need to explore the environmental, or ecological approach, often expressed through the concept of ecological security. This is a relatively underdeveloped theme of the literature. The concept of 'ecological security' emerged at the same time as environmental security. The concept implies a different security philosophy than that of the prevailing Realist approach, it also suggests a different security referent. However, these possibilities are not particularly explicit in current conceptualisations of ecological security. This chapter seeks to elicit these latent possibilities to advance the concept of ecological security.

This chapter seeks to examine the concept of ecological security. The chapter begins with a cursory review of the use of the term in the literature. Then it discusses the notion of resilience to further the concept, it also discusses the relationship between ecology and sovereignty. The chapter then deploys a framework to help determine which problems warrant consideration under the rubric of ecological security, and on this basis it is argued that nuclear power is an example of ecological insecurity. The chapter concludes with an assessment of the strengths and weaknesses of the concept of ecological security.

Before proceeding some qualifications are necessary. There is, at times, a conflation of 'ecological' security with 'environmental' security. This conflation creates considerable confusion for any discussion that seeks to distinguish ecological security from environmental security. The principal difference is one of emphasis. *Ecological* security, it is argued, emphasises at least implicitly that it is ecosystems and ecological processes that should be secured; the *prima facie* referent is therefore non-human. *Environmental* security for the most part emphasises the state as the security referent, most often in a way such that the

Realist approach dominates - as evident in the U.S. response and in the preoccupation with the environment-conflict thesis.[1]

9.2 An Overview of the Literature

Ecological thought entered the International Relations literature (at least) in 1965 with the Sprout's book *The Ecological Perspective on Human Affairs: With Special Reference to International Politics* (Sprout and Sprout 1965).[2] Mische (1992) 'claims' to have coined the phrase 'ecological security' in 1986 - although she gives no reference for this. In 1987 the United Nations General Assembly explored the possibility of an International Ecological Security System, and UNEP began using the term in 1988 (Brigagao 1990). The Warsaw Treaty member states also began using the term in 1988 (Timoshenko 1989). The link between ecology and security was consolidated in 1989, at which time Brown argued that security strategy should grapple with ecological issues (Brown 1989). Also in 1989 Eduard Shevardnadze formally made the link between ecology and security (in his terms 'political ecology') in a speech to the U.N. in which he said that: "political ecology requires urgent planetary decisions at the highest political level ... and since we are speaking of a major component of international security, political ecology requires the involvement of the Security Council" (cited in Thomas 1992: 53). The specific label 'ecological security' emerged in the same year with papers by Mische (1989), Timoshenko (1989), and Tolba (1989).[3] Also in 1989, the International Peace Research Association newsletter published a special issue on *Ecological Security and Peace* (IPRA 1989). Indeed, ecological security generally seems to be the preferred term of peace researchers.[4]

The distinction between ecological as opposed to environmental security is often blurred in the literature. The terms are used interchangeably and there is a general unwillingness to distinguish between ecology and environment. Rogers argues that ecological security requires a clear definition, and she defines it as:

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[1] There is, however, a vastly different alternative - that of the human security/environmental security nexus. This will be discussed fully in the following chapter as means to move beyond many of the shortcomings of the literature discussed thus far.

[2] However, this book did not discuss the notion of security explicitly.

[3] See also Lee who discusses ecological dynamics and national security with reference to industrialising countries (Lee 1989).

[4] Ecological security also seems to be the preferred term of feminists, Tickner (1992) in particular favours the term.

"the creation of a condition where the physical surroundings of a community provide for the needs of its inhabitants without diminishing its natural stock" (Rogers 1997: 30).[5] The distinction for Rogers is that environmental security refers more to the defence of natural resources - in effect a negative/reactive security like most prevailing conceptions of security - whereas ecological security refers to a positive security that seeks to proactively maintain ecological equilibrium in the long-term. The focus is thus on ecosystems as the referent object of security. The referent object is therefore *reversed* to make the biosphere the primary security referent; humans are secured only in so far as they inhabit the biosphere - indeed human activity is the principal threat in such a conceptualisation (a point lost on most environmental security analysts). Rogers therefore suggests that ecological security allows scholars to think about security beyond state-centrism, and that it "encourages, and in fact requires, that multiple actors become involved" (1997: 30). Rogers' definition is essentially sound, particularly given that it distinguishes ecological security from environmental security. It is this definition that this thesis has in mind when referring to ecological security.[6]

Like environmental security, the notion of ecological security is deployed as a means to contest the national and military emphasis of the dominant Realist approach to security. This has implications for common security, disarmament and financial disbursements, as discussed in earlier chapters (Evteev et al 1989, Ribeiro 1989). There is a notable absence of concern about violent conflict in the ecological security literature.[7]

Few authors discussed in part II of this thesis have attempted to take note of history; this, however, is a strength of Mische's work on ecological security.[8] She argues that for the earliest of human societies the principal threats to survival were natural phenomena, and that over time humans learned to lessen their vulnerability to these risks - much as suggested in chapter 3 of this thesis. Also similar to chapter 3, Mische argues that over time the locus of risks to survival shifted from

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[5] This is not unlike the Ecological Economists' definition of sustainability - see Common and Perrings (1992) and Pezzey (1992).

[6] Elsewhere I have argued for similar definition, presenting ecological security as "a biosphere free from anthropogenic damage"; hence the biosphere is the referent object, and human activity the principal threat (Barnett 1996c: 8). Timoshenko similarly argues that ecological security is a "biospheric approach" which seeks to "sustain equilibrium of principal natural-based forces and to avoid catastrophic effects thereupon" (1989: 238).

[7] Mische (1994) is an exception to the rule.

[8] Pirages also has a historical sensitivity, see for example Pirages (1991a).

(external) nature to inter-human relations (internal nature). In the present phase, Mische argues, "the danger arises not what from nature can do to the human, but rather the impact of human activities on nature and, in turn, the consequent effects on the human" (Mische 1989: 392) This dialectical human-nature interplay is compatible with Social Ecology (appendix I) and this thesis' understanding of the problem of environmental insecurity (chapters 1 and 3).

The concept of ecological security, Mische (1989) reckons, is useful for the way it fosters awareness of the common vulnerability of all people to environmental degradation. This is thought to motivate people to act on the basis of self-interest. However, vulnerabilities are not particularly common, and the responsibility for action and the likely effectiveness of action is not equally weighted. So, to return to a key theme of this thesis, some people are more vulnerable than others, and some are more complicit in environmental degradation than others. Accordingly, motivating action on the basis of a common self-interest is unlikely to be particularly effective in the industrialised world where wealth and institutional resilience lessen vulnerability, and where privilege and a consumption culture are most entrenched. Yet it is precisely the behaviour of individuals, governments and corporations in the industrialised world where action is most needed. This question of motivating action is complex, it will be discussed in chapter 11.

Another key theme of Mische's work is the need to "change our minds" and the "way we think about the earth and human/earth relations" (Mische 1989: 420). Mische argues that the notion of ecological security assists in a change of outlook and helps people to see "the significance of even seemingly small activities relative to their impact on the whole earth system" (Mische 1989: 420).[9] Ecology, she argues, is "a new cultural force" (Mische 1989: 424). This argument is valid enough, but it pertains to an *ecological* outlook and does not say much about the specific *security* dimension of ecological security. The question that remains, then, is why hitch ecology to security?

It is this question that most concerns Brock (1992).[10] Brock is more cogent than most in warning about the dangers of securitising environmental problems.

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[9] Conca (1994a) calls this the metaphorical function of ecological security, saying that it embodies symbols and imagery that shape thought and action.

[10] The debate between Brock and Mische in *New Agenda for Peace Research* (Boulding 1992c) is far more informative than that between Deudney and Gleik in the *Bulletin of Atomic Scientists* (1991), and than that between Levy and Homer-Dixon in *The*

He argues that the risk is that the concept - regardless of intent - "may be invoked to defend the status quo of the present world ecological order, in which the distribution of benefits from environmental degradation is clearly in favour of the highly industrialized countries" (Brock 1992: 95). Brock is concerned that linking security with ecology may affect an active non-resolution of environmental and social problems. In this sense his question - "why not refer to sustainable development?" - is pertinent (Brock 1992: 94). The intent of ecological security, he answers, is that it instrumentalises the high standing of security for environmental purposes (the tactic of securitisation). However, ecological security may offer more than simply a raising of the profile of environmental problems. If we unpack ecology we find a radically different and non-instrumental world view. Further, if we unpack security we may find something that sustainable development does not do particularly well - that is consider issues of risk and resilience (remembering that security is at its core a discourse of risk - see chapter 4).

In response to Brock's concerns, Mische explains why she "consciously and deliberately" uses the term ecological security and why she believes that "the merits outweigh the objections" (Mische 1992: 103). Her argument is that it is premature to evaluate the concerns about military appropriation (on this score this thesis has demonstrated that military appropriation is indeed a very real problem). Even so, Mische is not wholly dismissive of the prospect of military involvement, arguing that there may be genuine benefits because of the advanced state of military technologies relative to civilian technology, and because, as argued in the previous chapter, "using such technologies ... could be a positive step toward economic and technological conversion" (1992: 104). Mische is fully aware of the dangers here, but her principal rejoinder is that despite what the military and security elite may do, this does not make ecological destruction "less a *real* security issue - one that vitally affects the future prospects of war or peace - indeed, the very survival of future generations" (1992: 104). So, it makes sense to talk of ecological security because ecological degradation *is* a security issue.

The pivotal issue in this debate is how security is understood. Mische conceives of security in terms of general threats to well-being, as "the primary need to survive", a need "intrinsic in all human beings, indeed all species" (Mische

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Environmental Change and Security Project Report (Simmons 1995; see also the debate in Simmons 1996).

1992: 105). This differs from the dominant Realist conception of security. Thus there is a conflict of ontology and theory here that is reducible only by contestation of this "power word"; yet the difference is not likely to be resolved in the near term (Mische 1992: 105). Mische is right, then, to suggest that a key part of achieving peace "lies in human perceptions of the meaning and scope of security ... and of the best means and systems to promote and sustain it" (Mische 1992: 111) - this is a key rationale for this thesis.

It is these 'human perceptions' that Mische seeks to influence with the notion of ecological security. Mische argues that "citizens initiatives may be even more important" than the intergovernmental implications of the term (1992: 113). She is sensitive to the local-global synergies in the processes of ecological degradation, arguing that individuals and local communities have key roles to play, thus: "we need to develop a global culture of ecological responsibility" (1992: 113).[11] What is required, she argues, is "global civic literacy" which entails "a deep understanding of the earth system on which our lives and economies depend, and of the ways our human activities affect this life system" (Mische 1992: 113).[12] As well as information and education, agency is a key issue here: "we need not wait for government legislation ... we can take responsibility for our own actions in the laws we establish in our own hearts and minds" (Mische 1992: 115). These are certainly important issues, and will be given further consideration in chapter 11.

Ecological security puts forward the idea of the earth as the larger frame of reference against which ideological differences can be put into perspective (Mische 1989: 419). Mathews argues a similar point: "a deepening understanding of ecological relationships will gradually force us to shift our focus from an overriding concern for the welfare of our own species to that of the planet as a whole" (Mathews 1993: 31-2). This points to the intuitive difference between *ecological* and *environmental* security; the former adopts a more ecocentric approach. Ecocentrism rejects the human-centred and instrumental (anthropocentric) world view. It recognises that all forms of life have value independent of humanity, and it has a morality based on ecological principles (Eckersley 1992, O'Riordan 1995). The potential of the idea of ecological security

[11] Mische's ecological security project is therefore more than a project of International Relations and 'high politics'.
[12] This is very like Boyden's (1987) conclusion.

may well lie in this deep ecology-like sentimentality.[13] As Mische has noted, ecological security requires a new cosmology and a new approach to security; "it requires moving from a homocentric to a biocentric view of the world" (Mische 1992: 108).

> Mische agrees with this thesis' contention that security is about risk:
>
> There is a need for some balance between risk and security, and the effort to arrive at some balance implies activity and change in response to changing conditions. Within living systems, including human social systems, security is not a fixed or steady state, but functions more like an organizing principle stimulating and steering a dynamic, evolutionary process (Mische 1992: 105).

This conception of security points to resilience as an organising principle; yet resilience has been largely unexplored in relation to ecological and environmental security. Indeed, Dalby (1997b) identifies this as a silence in the literature.[14] There is therefore a need to flesh out some dimensions of this ecology-resilience aspect.

9.2.1 Ecology, resilience and security

There is need for caution when referring to 'ecology' in terms of security. Ecology is the field which studies biophysical systems. However "most ecological theory is highly contested" (Dovers et al 1996: 1151), and there are both 'hard' and 'soft' forms of ecology (Shrader-Frechette 1995). The uncertainty about what 'ecology' is and constitutes implies that the use of the term in political theory and International Relations generalises and possibly ignores important points of disagreement among ecologists themselves. In this sense Shevardnadze was more correct to refer to 'political ecology' (see above).[15] Having noted these difficulties, what can be safely said of the 'ecological' in ecological security is that, at a minimum, it refers to a (normative) Green sentiment or ecological outlook. This is ecology in the sense of a 'soft' and qualitative paradigm emphasising community, integrity and stability (Shrader-Frechette 1995: 126).[16]

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[13] See Naess (1993) for a review of deep ecology.

[14] It has also received little attention in international agreements on environmental issues (Dovers et al 1996).

[15] However, political ecology itself is a less than unitary notion. It is used as a critical paradigm (Finger 1992, Sachs 1993); as a more geography oriented empirical-investigative approach (Blakie and Brookfield 1987, and Bryant 1992); and as an emergent normative framework (Low and Gleeson 1998).

[16] Rifkin's *Biosphere Politics* is a good example of this ecological sensibility applied to security (Rifkin 1991). For Rifkin: "the resurrection of the earth as an organism profoundly alters our notion of security, creating the basis for both a cultural and political reformation" (Rifkin 1991: 255).

Few authors are sensitive to this problematic use of 'ecology' in political theory. Dalby, however, takes the word more seriously, and begins the difficult process of using ecology in its original sense (as the study of biophysical systems) to examine and reformulate security (Dalby 1997c). To understand security through the use of ecological metaphors is to provide a vastly different perspective than that of Realism which draws on metaphors of physics (Dalby 1996c). So:

> Ecology suggests a very different understanding of security. Strength is not measured in terms of physical metaphors of power but in terms of diversity and redundancy. Interdependence and symbiosis are crucial to survival. Survival relates to sustainability which depends on cycling and conservation of natural resources. This is very different political language, one that challenges the claims of state sovereignty, precise boundaries and military force. It also challenges the modern presuppositions of security and sovereignty as control (Dalby 1992: 515).

Ecological science is increasingly revealing that natural systems are complex, heterogenous and subtle (Dovers at al 1996). The principal lessons that have been drawn from ecology are that all life depends on a complex web of food chains; that these chains involve plants and animals, energy, water, carbon, and nutrients; that there are thresholds below which the viability of a species may rapidly and perhaps irreversibly decline; and that simple ecosystems tend to be more unstable than complex ones (Pezzey 1992: 325).[17] Another lesson from ecology is that there are finite limits imposed by energy and material availability, hence there are limits to the growth of human systems (Meadows et al 1972).

An important and often overlooked lesson from ecology is that ecological systems are constantly in short-term flux and long-term change. Dalby (1997c) uses this as a metaphor for rethinking political change, arguing that it helps us to understand ourselves "as in motion" (Dalby 1997c: 18).[18] The most crucial point about ecology, Dalby notes, is that the object of analysis is less the particular entity and more the complex and interconnected system in which it is situated. This is reflected in the increasing attention being given to ecological *processes* rather than single species or ecosystems in ecological research (and policy). Security from an ecological theory perspective therefore involves thinking about the whole rather than the parts. This means shifting the geographic focus from sharply delimited political spaces to a milieu of ill-defined locales in the broader setting of the earth. Politics therefore becomes less hierarchical and mechanical; it

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[17] This latter point is contentious but is generally agreed upon in principle.

[18] This dialectical flux/evolution perspective suggests that the Realist tendency to resist change is irrational (unrealistic).

becomes "about discussing matters in ways that deal with practical consequences of local actions and which engage in debates about political life that grapple with the questions of how one ought to live" [ethics] (Dalby 1997c: 17). In this ecology/politics view, the individual is reconfigured as "a participant in eco-geographical processes with multiple distant consequences" (Dalby 1997c: 17). Drawing on the lessons from ecological theory in this way sheds new light on, and reinforces, the dialectical outlook discussed in chapter 2. The implications of this for politics, policy and governance are discussed in chapter 11.

Ecological theory posits the notion of resilience to explain the character of ecological systems which are able to cope with major perturbations:

> Essentially, resilience in ecology is concerned with the longer-term survival and functioning of populations, species, and ecosystems in changing or fluctuating operating environments. Vulnerability, defined generally as susceptibility to injury, may be seen as inversely related to resilience: the more resilient, the less vulnerable (Handmer and Dovers 1996: 486-487).

In ecological theory, resilience means the propensity of an ecosystem to retain its organisational structure following perturbation; in other words, the ability of a system to recover after sudden disturbances (Holling 1973). Ecosystem resilience is seen to be a function of the complexity of internal interactions between organisms. According to Holling (1986), the more interconnectedness and complexity, the more resilient a system is to perturbations. Generally speaking, individual species within an ecosystem are therefore more 'secure' when the system is complex and diverse. As a metaphor for security, resilience suggests that human security is a function of social diversity and that that security should be about reducing vulnerability to change (not resisting change *per se*). O'Riordan and Rayner's (1991) analysis of global environmental risk management supports the proposition that diversity provides security when they argue that institutional plurality enhances social resilience.

Resilience, ergo security, means fostering heterogeneity, keeping options open, and keeping a broad view (Handmer and Dovers 1996). These ideas are inherent in Bookchin's Social Ecology (see for example Bookchin 1982, 1986, 1993). According to Bookchin, nature is a "participatory realm of interactive life-forms whose most outstanding attributes are fecundity, creativity, and directiveness, marked by a complementarity that renders the natural world the grounding for an ethics of freedom rather than domination" (1986: 55). So, welfare and well-being are grounded in social diversity; just as diversity is a

determinant of an ecosystem's resilience, social diversity, diversity of experience, and diversity of lifestyle provide a meaningful wholeness to being, and a benign synergism between humans and their habitat.

This theme of diversity offers a new perspective for peace research (Conca 1994b, Laferriere 1996); thus Mische argues that "respect for the diversity of life forms and a diversity of human cultures and expressions is vital to a Peace of the Earth" (1991: 142). Diversity also complements the poststructuralist concern for plurality; modernity stifles social, cultural and experiential diversity, making it the antithesis - and indeed the downfall - of security obtained through unity in diversity and complementary difference (see chapter 2 and appendix I). Here we see, then, the starkest possible contrast between the prevailing conception of environmental security which seeks to secure modernity, and an ecological conception of security which seeks to overcome modernity and its homogenisation of experience.

Ecological theory emphasises a cyclical conception of time. Ecological processes are circular in nature: "study biochemistry and you will see that all of nature's systems are circular designs. Nothing is linear, as most man made processes are" (Mathews 1993: 30). There is therefore a misfit between modern economic and political systems which are linear in nature, and natural processes (Durr 1993). Prins interprets this to mean that there is a need to "drive the linear logic of politics circular" (Prins 1990: 729).

Ecological theory and the theory of evolution puts the temporal scale of human existence into perspective. If we remember that *Homo sapiens sapiens* have been in existence for approximately 100,000 of 4,000 million years of life on earth, it becomes apparent that humans are inconsequential in the scheme of evolution; although to be sure, humans have an unheralded capacity to destroy life (see chapter 3). Even in this 100,000 year time span it is only in the last 200 years (at most) that humans have had the capacity to seriously and irrevocably alter natural systems. So, the broad sweep of history demands humility and prudence with respect to human behaviour and speciesist claims of supremacy (among all species and among human cultures). This long-term perspective radically contextualises national political time frames where all problems are held hostage to the two-four year electoral cycle (at least in liberal-democracies).

There are also political-geographical implications of ecological theory. Because biophysical process are diverse, complex, and are the sum of untold billions of minutiae eventually totalling the entirety of the biosphere, the implication for human systems is the need for complex, interdependent, multi-level and cybernetic systems of governance. Eckersley, for example, recommends a multilayered political structure which shifts authority both downward to local communities and upward to regional and global bodies, with authority allocated according to particular needs (Eckersley 1992). O'Riordan and Rayner also argue that to properly deal with the risk of global environmental change there needs to be a redistribution of power and "self-reliant anarchic interconnectedness at both personal and communal levels" (1991: 97). The argument is that complete decentralisation lacks coordination, whereas complete governance from above means a lacks sensitivity to context. This argument is revisited in chapter 11. Ecological theory strongly suggests that the nation-state's dominance of formal politics and governance is inappropriate, it also problematises the theory and practice of sovereignty.

9.2.2 Ecology and sovereignty

Central to ecological theory (and the ecological outlook more generally) is the notion of interdependence. That ecological and human systems are fundamentally interdependent suggests that the arbitrary drawing of political boundaries and the Realist emphasis on national sovereignty are flawed impositions; in Mische's terms: "today there is no walling out the rest of the world .... Our national boundaries .. are permeable membranes through which there is flow of life between our existence and that of the rest of the world" (Mische 1989: 390); and "the Earth does not recognise sovereignty as we now know it" (Mische 1989: 394). Tolba says that "the reality is that sovereign boundaries and political blocs are already irrelevant in may important ways" (1989: 35). In response, Mische recommends a new philosophy of sovereignty which regards sovereignty as a:

> [D]ynamic, interactive process involving a system of relationships and a flow of energy and information between different spheres of sovereignty. Even among humans, sovereignty can dwell in more than one place at the same time: in a family, with parents, in people at local or national civic levels, in the state, in a global authority (Mische 1989: 394).

Mische's alternative geographical imagination challenges Realism's exclusionary and simplistic view of the world as a series of homogeneous and independent political spaces defined by territorial boundaries. However, despite this

destabilisation of the ideal of sovereignty, the notion is not so amenable to manipulation. Westing (1989a) and Byers' (1991) promotions of bioregions as the basis of a new political geography also fail to fully grasp the complexities of sovereignty. All of these authors tend to omit consideration of the *autonomy* that is integral to the theory and practice of sovereignty; they do not resolve the dilemmas of independence in an interdependent world (Stewart 1997). Conca (1994c) argues that the literature which proposes a reconfiguration of sovereignty on ecological grounds makes excessively general assumptions about sovereignty. Sovereignty, he says, entails a complex bundle of rights, some of which, such as non-intervention, are strongly asserted against certain claims that interdependence demands a revocation of sovereignty. This is certainly the case when wealthy countries exert pressure on pariah countries (which they construct - these are typically industrialising countries, for example Brazil and its use of the Amazon forests). In response these pariah countries (rightly) stress the sovereign right of non-intervention as a norm that must be preserved. So, a positive aspect of sovereignty is that it is a means to resist globalisation from above, both in terms of environmentally-oriented discourses such as that of the U.S. (see chapter 7), and in terms of the imposition of global economic regulations. In sum then, sovereignty is multi-faceted and complex, and this "should make us humble about drawing general conclusions" (Conca 1994c: 708).

In the final analysis, what is perhaps most difficult about Mische's new philosophy of sovereignty is that she continues to use the term to describe a geographical vision which is anti-autonomy, and is therefore fundamentally anti-sovereign; it is not so much that *sovereignty* resides in multiple places and contexts, it is that individuals have multiple *responsibilities*. This is not to suggest that revisioning politics is easy, as Dalby notes, thinking beyond sovereignty, place and enclosure is extremely difficult (Dalby 1997d). However, it is the contention of this thesis that what is required is not a reconfiguration of sovereignty as such, but rather, what is required is a new vision of politics that emphasis community, responsibility and wholeness. This new vision of politics is the subject of Part III of this thesis.

9.3 What Issues are Ecological Security Issues?

Some critics of ecological security argue that it degrades the analytical and normative significance of the concept of security (Deudney 1990 and 1991, Stoett 1994, Levy 1995a). However, the prevailing Realist security agenda is far more robust than this, not least because of its ability to co-opt and appropriate conceptual threats and turn these to its advantage - a process which this thesis has already explained. Most importantly though, if security loses its analytical and normative significance, this would be a positive outcome for peace and the environment given that in the name of security millions have been killed and trillions of dollars wasted on socially and environmentally destructive military programs. Because security as presently practiced by states is inherently a practice of violence (Dalby 1998c), if security loses its normative significance, then this is a loss for the 'hawks' and a boon for the 'doves'.

Other critics argue that an all encompassing notion of ecological security strips the concept of its value as a conceptual device for informing policy (Graeger 1996, Keller 1997). Brock suggests that "if everything is a security matter then nothing is" (1996: 7), and Gleditsch suggests that:

> [V]ery wide definitions .. run the risk of including virtually every form of environmental degradation under the heading of a security threat. If the concept is to be analytically useful, its should probably be limited to those forms of environmental degradation which have effects comparable to war (Gleditsch 1994: 135).

Such arguments are not particularly sensitive to the enormity of the ecological security problematique. What is being referred to (at least by Mische and Rogers) is the destruction of habitat - the global environs - so of course the ambit of ecological security will be broad. In this sense ecological security is another discourse that says, fundamentally, that we shouldn't ruin the environment. Therefore, the criticism that ecological security is too ill-defined stems from an ignorance (be it active or passive) of the magnitude of environmental problems.[19] Further, it might also be said that rather than being imprecise, the concept of ecological security is indeed more precise than that of environmental security. As suggested in chapter 1, the notion of environment refers to everything there is, the

[19] On different forms of ignorance see Smithson (1989).

notion of ecological security, in contrast, refers more specifically to threats to the integrity of ecosystems.[20]

Nevertheless the question - "when are environmental issues security issues?" - has some validity, at least because there is a need to prioritise policy responses (Shaw 1996: 39).[21] Put another way, some issues may be important enough to warrant 'securitising' as a means to prompt an extraordinary policy response. Certain criteria can be used to argue that particular ecological issues warrant consideration as matters of security, these will now be discussed.

Before preceding though, it should be made clear that an ecological security issue is not necessarily a *national* security issue (as Shaw 1996 would have it), nor does an ecological security issue have to have any parallel with war (as Gleditsch 1994 would have it). The focus of this discussion is on issues of *ecological* security and secondarily on *human* security, and not, as most would prefer, on national security; although there are some implications for the nation-state.[22] So, ecological security is not the same as environmental insecurity as discussed in chapter 1 of this thesis. Environmental insecurity is seen by this thesis to be first and foremost a human security issue; this will be made more apparent in the following chapter. What is being considered here, then, are issues which affect the security of ecosystems first and foremost. Of course the distinction between human and ecological security is not as clear as this discussion might imply, but what is being emphasised here is the security of ecosystems or the biosphere, irrespective of the effects this may have on humans.

There are three obvious parameters which help to frame identification of important ecological, hence security problems; these are time, space and impact (see Dovers 1995, Dovers et al 1996, Handmer 1996a).[23] Dovers et al (1996) provide a broad three-tiered framework that serves as a filter for prioritising policy problems. They identify micro-, meso-, and macro- problems. *Micro*-problems are spatially and temporally discrete, they are generally local or sectoral; they are not

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[20] For a discussion of the notion of ecosystem integrity see Westra and Lemons (1995) and the papers therein.

[21] Levy (1995a), Lipschutz (1992b), and Maddock (1995) pose similar questions.

[22] Any framework for prioritising issues, it should also be noted, will have shortcomings, not least because of the indivisibility of causes in the sense that the causes are fundamentally rooted in modernity. The task of 'unpackaging the environment' then, is not trivial (Keller 1997: 9)

[23] Shaw (1996) identifies time and impact, but misses the scale parameter, adding instead that the impact on U.S. security interests must be assessed.

particularly complex, nor is there much uncertainty; and their resolution is not necessarily expensive and can generally be achieved through existing policy mechanisms. An example of a micro-problem would be the need to manage or provide for the recovery of a single species or vegetation reserve. Micro-problems then, clearly do not warrant extraordinary responses or a new conceptual or policy paradigm. *Meso*-problems are for the most part major issues but they are often contained within a country, and can be fully addressed by that country. An example of a meso-problem would be the conservation of a species across a broad geographical range. Meso-problems are thus significant, but do not pose systemic threats to patterns of consumption or production, nor do they require a fundamental reform of existing policy procedures. Meso-problems may be seen to be of relevance to national security, but in most instances do not warrant extraordinary responses nor new ways of conceiving of them. *Macro*-problems are "multi-faceted, complex, fraught with uncertainties, spatially and temporally diffuse, highly connected to other issues, and threaten major disruption of human and natural systems" (Dovers et al 1996: 1146). Examples of macro-problems include biodiversity loss and climate change. These are, in Dunn's (1981) terms, poorly structured policy problems, and they require a form of 'post-normal science' to take account of their complexity (Funtowicz and Ravetz 1991). Following Dovers at al's framework, ecological security issues are at a minimum these macro-problems.

Another rough filter comes from Handmer (1996a). From a risk perspective, Handmer proposes that the problems which warrant most attention (hence ecological security problems) are those which are largely invisible; unbounded; generally feared and create anxiety; tend to contaminate rather than directly damage; are generally irreversible and not self-recovering; and which are characterised by profound ignorance. This type of framework points to subtle and complex ecological damages. Toxic wastes and radiation contamination are the most obvious examples of these 'new species of problem' (Erikson 1995, Handmer 1996a). Such a framework implies that in addition to natural hazards, there may be "ecological emergencies" (Timoshenko 1989: 245) or "ecological accidents" (Evteev et al 1989: 169). The concept of ecological security would appear to have potential in this respect.

Perhaps the most comprehensive framework for 'scaling and framing policy problems' comes from Dovers (1995). Dovers identifies six problem framing

attributes: the spatial scale of causes and effects, the magnitude of possible impacts, the temporal scale of possible impacts, the reversibility of impacts, the mensurability (measurability) of factors and processes, and the degree of complexity and connectivity. Two issues neatly fall into Dovers' framework: biodiversity loss and climate change.

Biodiversity entails species diversity and genetic endowment; it is the very essence of evolution and species survival (Murray 1993, Wilson 1992). Its loss is a loss which affects the survival chances of all species, including humans. The causes of biodiversity loss are well known, logging, clearing for agriculture, urban sprawl, exotic species, and extension of monocultures all reduce the area of 'wilderness' in which genetic diversity flourishes. These same activities also cause habitat fragmentation which reduces the resilience of these ares to climatic variation. Pollution and the extension of infrastructure also serve to lessen the integrity of biodiversity-rich areas.[24] Following Dovers' framework, biodiversity loss qualifies as an ecological security issue because it is global in scope, its impacts concern survival in fundamental ways, the problem has evolved over a long period of time and is not easily - if at all - reversed, it is complex in scope, and is difficult for contemporary political and economic systems to accommodate.[25]

Climate change is similarly of such a scope that it warrants urgent attention and securitisation. Climate change is global in scope; its impacts are by most estimates likely to be very severe; it is a long-term, potentially 'runaway' issue which is not reversible except in the very long-term (and such a reversal, if at all possible, will be by natural more than by human intervention); and the degree of connectivity is probably higher than any contemporary issue, making it complex and difficult for political and economic systems to deal with (Dovers 1995). Therefore, climate change also qualifies as an ecological security issue.

Dovers' framework is a valid basis upon which to determine ecological security issues. A further issue, that of accidental releases from nuclear reactors,

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[24] Therefore Butts' suggestion that U.S. military assistance in road building in 'game reserves' in Africa helps preserve natural environments is misleading (Butts 1994).

[25] Biodiversity is an issue that continues to defy adequate coverage by the notion of 'environmental security' not least because it is complex, resists simplistic linkages with conflict, and involves a degree of ecological sensitivity to which contemporary political logic is immune.

will now be discussed in the context of this framework as it also arguably qualifies as an ecological security.[26]

9.3.1 Nuclear power: a case study of ecological insecurity

Nuclear power has long been a contentious issue in environmental politics. The debates are complex and pertain to the vexing problem of energy and its multifarious environmental and social impacts. Despite this complexity, debates about nuclear power have stagnated for lack of fresh perspectives. This discussion seeks to offer a new perspective through the use of ecological security.

The proposed development of a nuclear power program in Indonesia and the Chernobyl reactor accident are the primary examples that inform this discussion. Indonesia currently generates 350 kwh of electricity per person, compared with the world average of 2,200 kwh per person (Economic and Business Review Indonesia 1996: 6). Energy demand is therefore particularly acute, and in response Indonesia plans to develop twelve nuclear reactors in the Mount Muria region in Java, a region noted for its considerable seismic activity (Ahimsa 1995, Barnett 1997d, Schlapfer and Marinova 1995).[27]

The possibility (risk) that these Indonesian reactors might accidentally release radioactive material, not unlike the Chernobyl accident, is cause for concern. Eisenbud (1990) notes that there were 14 reactor accidents involving core damage between 1952 and 1986. Even proponents of nuclear power acknowledge that safety is a problem: "the nuclear community has to ask itself whether it is ethical to insist on present technology which is likely to be less safe than it could be, and above all which cannot eliminate the universally feared threat of disaster" (Stadie 1996: 24). Probabilistic assessments of the risk of an accidental release are less than helpful: "the frequency of such occurrences is well nigh impossible to estimate probabilistically" (WCED 1987: 233). Indonesia's capacity to safely operate nuclear reactors is affected by latent conflict in the political system, and by a low degree of bureaucratic accountability and transparency. There are also questions about technological competence (Williams 1996). The problems of safe construction and operation are compounded by Java's high level of seismic activity - it is the second most active of nine international seismic zones (Schlapfer

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[26] This discussion is based on Barnett (1998b).

[27] Recent political upheaval in Indonesia is not likely to alter these plans because the most ardent proponent - B.J. Habibie - is now President of Indonesia.

and Marinova 1995).[28] Given these human and natural factors, there is real risk of a reactor accident in Indonesia.

The most difficult ecological policy problems are those with the most widespread impact (*spatial scale*), particularly if the impacts are spread across political boundaries (Dovers 1995: 96). Taylor and Whitehouse (1996) have run an atmospheric chemical tracer transport model which shows that an accidental release of airborne radioactive material in Indonesia would effect Australia, Brunei, Malaysia, Papua New Guinea, Singapore, Thailand, and of course Indonesia itself. Java, where Indonesia plans to build its first reactors, has a population of 115 million people. To compare, the Chernobyl accident spread the long lived radioisotopes Cesium-137 and Strontium-90 over an area of some 100,000 square kilometres (Marples 1993: 39). However, in the tropical climate of Southeast Asia there is more rainfall than in Eastern Europe (particularly during summer). This is significant as rainfall seems to deliver higher concentrations of radioactivity (Barnett and Taylor 1997). So, even if an accident in Indonesia released a smaller volume of contaminants than Chernobyl, it might nevertheless result in more intense damage.

Within each nation-state at risk from exposure to fallout from a reactor accident in Indonesia, there are places and people who are disproportionately more at risk. This is particularly true in Australia. Taylor and Whitehouse (1996) show that much of Northern Australia will receive fallout. The ratio of Aboriginal people to non-Aboriginal people in this zone is many times greater than the national mean; 25% of the Northern Territory's population is Aboriginal for example, and the whole of the area at risk would contain a very significant proportion of Australia's total Aboriginal population (NLC 1995). Australia's Aboriginal population therefore bears a much greater risk burden that the non-Aboriginal population.[29]

Continuing to apply Dovers' (1995) framework, the *magnitude* of possible impacts is the degree of damage to natural and human systems. Greenhalgh (1996)

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[28] An 'earthquake proof' reactor in Java would have to be able to resist quakes in the order of nine on the Richter scale - this would seem to be an unprecedented standard in nuclear engineering (see for example Nedderman 1995). This of course assumes that an 'earthquake proof' reactor is indeed possible - something Australia's Fox Inquiry doubted (Commonwealth of Australia 1976).

[29] In terms of *places*, a quick examination reveals that Northern Australia contains a substantial component of Australia's least disturbed natural heritage, both in area and ecological value (see chapter 8).

notes that 20-25% of the annual budgets of the Ukraine and Belarus are now spent on coping with the consequences of the Chernobyl accident, although Savchenko (1995) considers the economic costs to be unbounded. In health terms, some of the populations exposed to fallout from the Chernobyl accident have experienced a hundred-fold increase in childhood thyroid cancers (WHO 1996). Tellingly in terms of security, the magnitude of the clean up after Chernobyl has been likened to the task of rebuilding after the German-Soviet war (Marples 1993).

The third of Dovers' problem framing attributes is that of the *temporal scale* of possible impacts. The release of twenty radionuclides from the damaged Chernobyl reactor resulted in short-term (but intensely damaging) and long-term effects (NEI 1996). It is estimated that between 50 and 60% of the reactor core's inventory of Iodine-131 was released, causing the aforementioned massive increases in thyroid cancer (NEI 1996). Iodine-131, however, remains active for only about 80 days. Other longer lasting radioisotopes were also released at Chernobyl, including Cesium-137 (20-40% of the reactor core's inventory), and Strontium-90 (4-6% of reactor core's inventory); both of which will remain active and harmful to human health for up to 300 years (Clayton et al 1986). Smaller amounts of very long lived plutonium were also released (NEI 1996). In terms of Dovers' fourth attribute - *reversibility* - the widespread permeation of these long lived radioisotopes into soil, water, plants and animals makes contamination pervasive and irredeemable. The fifth attribute - *mensurability* - is the degree to which we understand and can describe the causes, impacts, factors, and processes pertinent to the problem (Dovers 1995: 97). Given the pervasive and largely invisible accumulation of radionuclides in the environment, the degree to which science can predict outcomes from a reactor accident is limited; the problem is thus highly immensurable.

The last of Dovers' (1995) framing and scaling attributes is the *degree of complexity and connectivity* (the essence of the *mensurability* problem). In effect, to appreciate the scale and nature of the impacts of a reactor accident, we need to be able to identify all those ecosystems at risk and then understand the ways in which each works and interacts with each other; a task possibly forever beyond the capacity of human understanding. The issue becomes more complex when we factor in the whole array of political, economic and social factors and the ways in which these interact (both in cause and effect). There are few policy issues that can rival the nuclear power problem in terms of the complex and interdependent

interaction among and between ecological and human systems on a variety of scales.

Proponents of nuclear power argue that because it produces negligible amounts of greenhouse gases it is a viable solution to the problem of other fossil fuel based energy sources. Keepin puts this argument into perspective:

> To displace coal alone would require the construction of a new nuclear plant every two or three days for nearly four decades, and even then, future growth in oil and natural gas consumption would still be sufficient to keep carbon dioxide emissions at or above today's levels until supplies are exhausted (Keepin 1990: 4).

In ecological security terms we are thus presented with a trade off between the meta-environmental insecurity associated with climate change and the meta-insecurities associated with nuclear power. However, this is not an either/or proposition - there are viable renewable energy alternatives available. These 'soft' energy options have greater long-term potential than fossil fuel and nuclear based energy sources (World Bank 1992). Their realisation is hampered by the displacement of energy research and development funds into resolving the (seemingly unsolvable) problems of nuclear power; the biggest barrier to the implementation of a sustainable energy system is not technical, but political (Dovers 1994). In terms of global energy inequities, the issue is neither the industrialising world's right, nor need, to increase electricity supply, but the ways in which they do so; renewable energy sources are a viable, cheap, clean and more precautionary alternative to nuclear power.[30] Transfer of renewable energy technologies to the industrialising world must be a policy priority.

Accidental releases from nuclear reactors have widespread, long-lived, irreversible, complex, and unpredictable negative ecological and social impacts.

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[30] For a discussion of the national and regional security implications of Indonesia's nuclear power program see Barnett (1997d, 1998b, 1998c), and Barnett and Taylor (1997). For a discussion of the policy implications for Australia, see Barnett (1998c), where I argue that for Australia to be consistent in its objection to Indonesia's nuclear power program it must be consistent with regard to its own part in the nuclear fuel cycle; it would be overly hypocritical to object to nuclear power in Indonesia yet continue to sell uranium. So, a consistent policy that adds credibility to Australia's conviction is to *prohibit all uranium exports to all markets, except for the small amounts needed for medical purposes.* This would provide a much needed reaffirmation of Australia's commitment to the peace, stability and security of the Asia-Pacific Region. It would also be a long overdue political statement about the hazards of nuclear power. Banning uranium exports will give Australia a clear and uncompromised position on the issue of nuclear weapons non-proliferation, and will create opportunities for subsequent diplomatic initiatives to overcome the problems of nuclear power and nuclear weapons. Finally, this would resolve the intense debate at present about the expansion of uranium mining in Kakadu National Park.

Therefore nuclear power plants are a serious (albeit latent) risk to ecological security. In terms of the need to determine which ecological issues deserve security status, then, nuclear power rivals other meta-problems such as climate change and biodiversity loss. Securitising nuclear power in this way is useful as it presents the problem as one which jeopardises the national interest and so requires an extraordinary policy response.

9.4 Conclusions: Concept and Contest

This chapter has reviewed and extended the concept of ecological security by applying ecological theory to the concept of security. Ecological security is a valuable way of thinking about security, especially when it incorporates the ecological notion of resilience. Applied to security, resilience means embracing diversity and complexity which stands in contrast to Realism which denies and oppresses diversity and complex realities. This chapter has considered the implications of ecology for the theory and practice of sovereignty. It has tentatively suggested that a focus on sovereignty is misplaced, and that what is required instead is a broader project that seeks to rethink politics and governance. This chapter has also discussed one way to prioritise ecological problems for policy attention. It has argued that climate change, biodiversity loss and nuclear power are substantial issues that can rightly be considered as ecological security issues. The notion of ecological security has great potential and could be developed further, although, as argued below, the concept is perhaps more useful to ecologists than to the Green and peace movements.

In some respects the concept of ecological security shares the same difficulties that plague environmental security; it risks a militarisation of Green issues, it entrenches rather than undermines national power, and it invokes inappropriate responses (Deudney 1992, Brock 1991, Lipschutz 1992b). Conca argues that ecological security reinforces notions of stasis, bolsters sovereignty, mixes metaphors such that it becomes harder to imagine a peaceful and ecologically sustainable world, and militarises the environmental agenda (Conca 1994a: 18). The principal dilemma, he argues, is that "the cost of elevating ecology to the level of a national-security concern may be its militarisation" (1994a: 19). Hence the 'securitisation' issue re-emerges. If ecological security is a 'Trojan horse' that seeks to reform the meaning of security by working from

within, according to Conca, it has been captured and redeployed in conceptual counterattacks.

Conca's concerns about ecological security are important but need to be qualified in at least two key ways. First, Conca is one of those who conflates environment and ecology; so he does not appreciate the difference between the two concepts, and as a result his critique refers more to environmental than ecological security. Second, were Conca to think through the implications of ecology for security, as Dalby, Mische and Rogers do (and as this chapter has sought to do), he might consider that ecological security entails a more specific ecocentric sentiment and offers new metaphors for security. To be fair, however, there have been too few serious efforts to draw out the implications of ecological as opposed to environmental security; both Dalby and Mische do this to some degree, but such accounts are not comprehensive enough (nor is this chapter). Part of the future agenda of ecological security must therefore be to 'ecologise' security more fully. This might proceed in the first instance by further exploration of resilience as a key concept.

Despite seeking to undermine the Realist approach to security and sovereignty, proponents of ecological security have not had the same impact on the dominant discourse as counter-hegemonic proponents of environmental security such as (for example) Brown (1977) and Mathews (1989). One need look no further for proof of this than that 'ecological security' is never used by the U.S. security establishment, nor by the vast majority of authors who write about environment-security linkages. This is a problem of the politics of discourse. To continue the analogy, this thesis contends that the Trojan horse of ecological security has been left outside the gates of the Realist security compound, whereas environmental security has been wheeled inside. So, although ecological security speaks to the whole issue of environment and security in important and innovative ways, it is, in effect, not heard by the mainstream. Ecological security does not do that which 'environmental security' does so well - that is contest the terminology and the discursive terrain of national security. It is this contestation that makes environmental security valuable. In deploying alternative language ecological security is marginal to this discursive contest.

To be sure, there is something to be said for using new words to address old problems. As has been shown, environmental security is a risky venture for

proponents of a Green and peaceful future. In this sense environmental security is a form of conceptual speculation where the concept is ventured in order to potentially gain a renegotiation of the conceptual bases of security. The danger is the colonisation of the concept such as has occurred in the U.S. (chapter 7). Using new words like ecological security may temporarily avert this danger. However, the potential gain of this speculative exercise is the destabilisation of Realist security discourse and practice by highlighting its contradictions and discontinuities, ultimately leading to its possible collapse, or at least a more benign synthesis.[31] So although the negative outcome of securitising environmental issues is real, the positive outcome is worth striving for. This contest is one in which ecological security has not (and probably will not) played a key role because of its alternative vocabulary. It may seem pedantic to deny the efficacy of ecological security because of the word 'ecological' as opposed to 'environmental', but in the realm of discourse key words matter.

This issue of contest and cooptation is not new. The history of political discourse is a history of deploying words as signs, symbols and metaphors to legitimate a particular goal, be it the status quo or some other preordained outcome. This is the essence of counterrevolution; the continuous capture, emptying and subsequent redeployment of words and ideas that initially threaten. This is the fate of *peace* when paired to war; of *socialism* when used by apologists of cronyism; of *defence* when used to justify attack; of *free speech*, *democracy*, *freedom*, *liberty* and *rights* as justifications for verbal abuse, the politics of hatred, the freedom to associate as the freedom to do violence en masse, the liberty to engage in wilful exploitative capitalist enterprise, and the right to bear arms and shoot first; it is also the fate of sustainable development. The answer is not to abandon the language of peace and hope, but to defend it. Abandoning a term because it is corrupted is to retreat from the struggle for a better future. Throwing up new terms to be appropriated does not stop the problem. This is the unwitting deeper failing of ecological security, it is a sympathetic bystander on the sidelines of the substantive contest.

To conclude, although ecological security has many strengths, it fails to effectively engage in a fundamental function of environmental security - the contestation and delegitimisation of security itself. For this reason this thesis prefers to maintain the label 'environmental security', but to empty it of its

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[31] Or the abandonment of the term by the security elite.

malignant content and refill it with notions of human security and positive-peace (the function of the following chapter). Putting people first in this way does not mean ignoring the lessons of ecology. The principal difference is that putting people first and retaining the label maintains the ability to contest the substantive issue of what security is and for whom it applies. So, many of the themes and ideas discussed in this chapter are of relevance to the next chapter's reformulation of environmental security, and these should be borne in mind throughout the remainder of this thesis. In this respect this chapter has served a valuable function by acting as a transition between the dominant approach to environmental security and the following alternative and peace promoting approach.

Part III

Towards Environmental Security for People

Introduction to Part III

Towards Environmental Security for People

Having explicitly revealed the critical and normative disposition of this thesis in chapter 2, subsequent chapters have advanced a number of claims upon which Part III of this thesis is based. First, environmental degradation is now more severe and widespread than at any other time in history, some problems are now global in reach, and environmental degradation is inextricably a product of modernisation (chapter 3). The environmental degradation generated by processes of modernisation has further exacerbated insecurity (chapter 1). However, given that human history is a history of adaptation and change, environmental degradation and insecurity are not insurmountable; the question then becomes - how might we overcome environmental insecurity? - a question which Part III begins to address.

The second claim of this thesis is that the political Realist approach to security is violent because it propagates the war-system, it excludes consideration of the needs of people, and it impedes peaceful and ethical political action (chapter 4). There is a pressing need to move beyond the Realist approach. The notion of environmental security was originally intended to do this by broadening the ambit of Realism (chapter 5). However, this did not modify the central tenets of the Realist approach, although it did reinforce the need for common and cooperative approaches to security. The third claim, then, is that it is not enough to tinker with the Realist security agenda; if environmental security is to serve the interests of peace, the environment, and people, it needs to be far more theoretically comprehensive to help prevent its appropriation by Realism (the purpose of chapter 10). It also needs to be able to offer some specific recommendations for action in order to be able to better contest the meaning and practice of environmental security (the purpose of chapter 11).

The fourth claim of this thesis is that it is unproductive and misleading to reduce the concept environmental security to consideration of the linkages between environmental degradation and violent conflict (chapter 6). This has redirected environmental security into the same epistemological and theoretical niche in which Realism is most comfortable; if environmental security is to serve

the interests of people, peace, and the environment, then the preoccupation with violent conflict needs to be avoided. The fifth claim is that understanding environmental security in terms of national security does not serve the interests of most people, peace, or the environment so long as security is seen in Realist terms. Chapter 7 has shown that when interpreted by the nation-state (at least the U.S.), environmental security is used to legitimate the state and the military, both of which, without fundamental reform, are complicit in the problem of environmental insecurity and the broader problems of modernity. This thesis is in principle not opposed to understanding environmental degradation as a national security issue, it is opposed to the particular Realist interpretation of national security that appropriates environmental concerns to serve its own interests. The further claim here is that although the nation-state is a problematic referent for environmental security, there is still a need to engage with it and its institutions.

The sixth claim of this thesis is that the military is a significant cause of environmental degradation both in times of war and times of not-war (chapter 8). However, simply ignoring the military is not a sufficient response because it must be reformed to overcome environmental insecurity. It was argued that involving the military in environmental protection and restoration is one way to overcome its reluctance to change; this may make a significant contribution towards the conversion of this most important of institutions. Finally, this thesis has claimed that ecological security is a concept with considerable merit, but that it is marginal to the substantive contest over the meaning of security (chapter 9). The best strategy, then, is to incorporate the content of ecological security into a reformulated notion of environmental security which can advance the interests of peace, people, and the environment while retaining its ability to contest the meaning and practice of security. This is the purpose of the following chapter.

Thus far this thesis has talked about what environmental security should not be rather than what it should be. Although polemical, the critical approach is safe in as much as one's own perspective and recommendations are not exposed to scrutiny. So, it is tempting to do no more than critique environmental security, but this thesis feels obliged to outline an alternative approach. This is the function of Part III, which begins by reformulating environmental security in light of the failings of existing approaches. This reformulated environmental security concept serves the interests of people rather than states, it focuses on peace rather than war, and it advocates change rather than stasis. It also retains the ability to contest the

meaning and practice of security. Taking the concept of security away from the state and towards people in this way "points to a serious political project" (Walker 1987b: 25). Such a project involves rethinking political practice, and this is the function of chapter 11, which discusses the implications of the human-centred reformulation for politics, policy, and governance.

Chapter 10. Environmental (Human) Security

10.1 Introduction

This chapter seeks to reformulate the concept of environmental security such that it overcomes the limitations of existing approaches. With the exception of ecological security, in as much as they are concerned with violent conflict and they refer most frequently to the security of the nation-state, existing approaches are Realist in orientation. The principal failings of these approaches can be summarised as follows: they propagate the security establishment and the state; they prepare for war rather than peace; they defend rather than seek reform of the environmentally destructive modern way of life; and they ignore the needs and desires of most of the world's population. In short, as presently conceived, environmental security secures the processes that destroy the environment and create insecurity for the many for the benefit of the few. Ecological security has few such limitations, but fails to contest the meaning and practice of security and environmental security because of the uncommon label 'ecological'. So, what is required is a reformulation of *environmental* security which draws on the strengths of ecological security, and which does not prioritise the nation-state and issues conflict above the needs of those who are most environmentally insecure. This therefore entails reformulating environmental security in terms of *human* security and peace.

This chapter begins by discussing the human security literature to establish themes which inform the subsequent conceptualisation of environmental security. It then defines and elaborates on the idea of environmental security for people. Next it discusses the potential of the concept and how it relates to sustainability. It then considers the question of whether it is valid to 'securitise' environmental problems, and following this it discusses risk and resilience in terms of environmental insecurity. The validity of this conceptualisation of environmental security is then 'tested' by answering some questions posed in the literature.

10.2 Reclaiming Security for People

In the last 10 years there has been a considerable amount of literature which advances the concept of security beyond national security. This literature puts the needs of people above the needs of the nation-state, and it commonly talks of 'human security'. It is therefore highly relevant to this thesis.[1]

Human-centred conceptions of security begin by asking the question - *whose security?* Asking - *whose security?* - is subversive; it questions the state's monopolisation of political legitimacy and violence (Walker 1987b). Asking - *whose security?* - opens up space to consider alternative meanings and referents of security, as well as alternative strategies. Asking - *whose security?* - "threatens to undermine the most basic presumptions about the possibility of security and the possibility of political community" (Walker 1987b: 12).

The end of the cold war, together with advances in communication technologies, the continued expansion of capitalism, the destruction of nature, and the declining purposefulness of force in world politics has lead Rosenau to describe the 1990s as 'post-international politics' (Rosenau 1990). For Rosenau 'security' is becoming increasingly elusive due to the interaction between globalising and localising dynamics. The political space opened by this global-local interaction creates a need for new forms of identity and community in response to shared insecurities (Rosenau 1994). Walker explores the potential in this new world: "the fact that insecurity is now felt both locally and globally .. provides an opportunity to redefine security in ways that stress both its local immediacy and global reach" (Walker 1987a: 187). For Walker there is no reason why forms of political community which give priority to difference, pluralism, 'conversation', and openness cannot emerge in the post-cold war world. His suggestion is that prevailing concepts of security can only be overturned by "refusing the equation of security with identity, and thus with the obliteration of difference; a refusal that necessarily constitutes a struggle for new forms for political community" (Walker 1987b: 23).

For many feminists it is not only war but also unjust relations of domination and subordination which must be overcome for there to be peace and human

[1] This discussion is based on Barnett (1997b).

security.[2] Tickner's feminist reformulation begins from the premise that the desire for close relationships and belonging are undervalued aspects of human nature, and so these form the basis of her approach to security. Emphasising life-giving as opposed to life-destroying processes is important: "the preservation of life, not its destruction, must be valued" (Tickner 1992: 138). A deepening of referents and scales of actions is also a key part of the feminist approach; the micro is seen to be reified in the macro, the personal is seen to be political, and so "issues of global security are interconnected with, and partly constituted by, local issues; therefore the achievement of comprehensive security depends on action by women and men at all levels of society" (Tickner 1992: 142). This question of individual action will be taken up in chapter 11.

The Secure Australia Project (SAP) puts forward a comprehensive set of alternatives to thinking about Australia's security (Cheeseman and Kettle 1990, Smith and Kettle 1992).[3] The SAP begins with the simple statement: "the concept of security has been hijacked" (Smith 1992: 25). It gives consideration to the identity aspects of Australian security discourse (Pettman 1992); to human rights as a security issue (Jones 1992); to Australia's indigenous people as a security referent (Pettman 1992, Smith 1992); to the environmental dimensions of Australian security (Bolt 1992); to security at the community level (Bretherton 1992); and to Australian security policy (Camilleri 1992, Hunt 1992, King 1992, Smith 1992). These alternative referents and alternative ways of thinking have deepened the level of analysis and have posited different forms of insecurity. The SAP has a geographical frame of reference that looks both within and beyond the state with equal measure (Dalby 1996a). The alternative geopolitical reasoning that underlies the SAP does "not operate on either the premise of enmity or the premise of substantially impermeable state boundaries" (Dalby 1996a: 74). This alternative security position is premised on a careful manipulation of existing Australian security discourse, particularly evident in Cheeseman's proposals to reformulate Australia's military force structure to render it non-offensive (Cheeseman 1989, 1990, 1992).

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[2] This discussion is informed largely by Tickner's (1992) particular feminist approach to security. Other feminist approaches may differ (see chapter 2 and appendix I), however Tickner's account is widely recognised and it talks directly to 'security'.

[3] Jennings (1994) offers a critique of the SAP which is valuable not so much as a critique of the SAP, but as an insight into the way in which a Realist ontology tightly constrains identification with alternative possibilities.

In *One World Many Worlds* Walker speaks of security from the perspective of critical social movements (1988). The lesson learned from these movements is that insecurity takes many forms, and so approaches to security must be diverse, multidimensional, and located at many levels of society. A single dominant security concept (such as national security) therefore does not satisfy the full range of security needs of people. Walker has consistently argued that rethinking security involves a rethinking of the relationship between security and political practice. A necessary first step is the democratisation of security issues, a call also made by the SAP and by feminists. Thus "security is not something that can be left to someone else. In a modern world, effective security must mean democratic security" (a subject addressed in chapter 11) (Walker 1988: 126).

The potential impact that social movements might have on world politics has also been considered by Stephenson:

> A series of popular movements have arisen since the 1960's, based on a non-violent approach to social and political change and on a view of peace which incorporates human rights and social justice as well as the absence of war .... they have exemplified a way of thinking that reinforces the notion .. that force is no longer the primary determinant in international relations, and carries this notion through to the sub-national level as well. A new concept of power is involved. (Stephenson 1988: 67-8).

Stephenson suggests that important factors in the development of alternative security systems include the work of peace researchers in imagining alternative futures, the development of non-offensive and non-violent methods of defence (and resistance), the widespread application of peace education, and growth in the field of conflict resolution (Stephenson 1988).

In a similar mode of analysis, Boulding (1988) has discussed the role of International Non-Governmental Organisations (INGO) in generating a global civic culture. INGO's operate within a multidimensional security paradigm which complements positive peace. They are active in resisting and promoting alternatives to existing policies on a wide range of issues that affect the well-being of people, including trade, human rights, arms control and the environment. Like Stephenson, Boulding sees merit in peace education and alternative futures workshops as a means to assist people and counterculture movements to wrest authority over security matters from states.

The recognition that the home state (rather than the 'enemy' state) is most often the biggest threat to a person's security is the starting point for an important line of security reasoning made by Booth (1991). For Booth, security defined as

'power over' occurs at the expense of others; hence "true (stable) security can only be achieved by people and groups if they do not deprive others of it" (1991: 319). Booth argues that 'emancipation' should be given precedence as a way of thinking about security: "emancipation, not power or order, produces true security. Emancipation, theoretically, is security" (1991: 319). The question 'whose security' is answered resolutely here: "humans are the ultimate referent" (Booth 1991: 319). Integral to Booth's approach is the ethical premise that one person's freedom is conditional on the freedom of all people. The policy implication is a breaking down of the distinction between the domestic and the foreign. In suggesting that true security depends on the security and freedom of all, Booth draws on Weber's notion of methodological individualism; ie that individual action can recreate society (see chapter 11). Shaw (1993) also considers this idea of individual action as a means to security. He draws heavily on Gidden's discussion of the effects of modernity on the individual. Shaw concludes his attempt to integrate sociological theory with security by saying:

> Individual and collective human security do not depend irredeemably on the state context ... Security issues are faced at all levels of social life. The concept of security is a general concept of social science (Shaw 1993: 174).

The United Nations Development Program uses the concept of human security to assist in the framing of development and justice issues (1994, 1995). The UNDP adopts a comprehensive approach to human security, identifying seven components: economic, food, health, environmental, personal, community, and political (1994).[4] The 1994 *Human Development Report* says that:

> Human security is people-centred. It is concerned with how people live and breathe in a society, how freely they exercise their many choices, how much access they have to market and social opportunities - and whether they live in conflict or peace (1995: 229);
>
> In the final analysis, human security is a child who did not die, a disease that did not spread, a job that was not cut, an ethnic tension that did not explode in violence, a dissident who was not silenced. Human security is not a concern with weapons - it is a concern with human life and dignity (UNDP 1994: 22).

So the UNDP has sought to deploy the word 'security' in its more intuitive and positive sense to serve the interrelated interests of peace, justice, development and

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[4] The United States' Under Secretary of State, Tim Wirth, also recognises the importance of human security, and conceives of it in a way similar to the UNDP. For Wirth, "human security is built on a foundation of peace and political stability, physical health, and economic well-being", and "there are close connections between poverty, the environment, the economy and security". He suggests that "we now need to liberate ourselves - from outworn policies, from old assumptions, from fixed views.." (cited in Simmons 1995: 55). This is radical given the context from which Wirth writes.

human rights. This represents a significant contribution from a leading and respected international body.

The idea of common security has been popular since the publication of *Common Security* in 1982 (ICDSI 1982). Common security, however, has traditionally been equated with the security concerns seen to be common to *states*; such concerns do not encompass many of the security issues common to people. Not unlike the UNDP, however, Dalby understands common security in human rather than international terms, saying that:

> Security is truly common when the weakest are offered the possibility of a future free from famine, violence, rape, and the role of nuclear hostage to the rivalry of states. Security is common when it ensures that the poor have access to resources, freedom from environmental degradation and the pollution of others' economic activities, and from the assurances of these things into the foreseeable future. As such, common security should have a clear commitment to social justice, but not just to intra-generational equity. Future generations require a commitment also to inter-generational equity, ensuring that actions of today don't leave security problems for future generations (Dalby 1991: 30).

Security productively intersects with sociology on the subject of modernity. Walker observes that "contemporary strategic debate is particularly arcane. Decisions are made - or at least justified - on the basis of esoteric forms of information which only a small elite can successfully claim to know" (Walker 1987a: 177). An implication of this is that security, as an 'expert system', is another disembedding process. Giddens (1991) is concerned with the way such expert systems induce 'existential anxiety' and erode 'ontological security' (see chapter 3). One response to the ontological insecurity individuals now face is to reinvigorate modes of being that have been lost in modernity. In addition to material requirements (nutritious food, clean air and water, shelter), Boyden identifies many basic social needs that together can be considered as fundamental to the existential well-being and security of people, these include: an emotional support network for giving and receiving care, strong family ties, opportunities for extended community interaction, a diverse and stimulating environment, opportunities for creative expression and learning, opportunities for spontaneous behaviour, and a personal sense of involvement, purpose, belonging, excitement, challenge, satisfaction, love, enjoyment and confidence (Boyden 1987: 79).

It was argued in chapter 3 that non-violence has historically been the normal state of affairs between humans. So, it makes sense that "to erect national security regimes on the reverse assumption is to do injustice to the processes which really

guarantee survival through time" (Clements 1990: 2). Security, in this view, rests on more than avoiding danger, it rests on a willingness to act in good faith and with trust in others. Because (most) people learn basic lessons about trust and security in close personal relationships, the principles that underlie these should be used to inform relationships between social groups, including states. Clements defines security as:

> [A] fundamental social process (with some instinctive spontaneous properties) aimed at achieving relatively safe social, political and economic (spaces) communities. Such communities enable people to live, move and be true to their own cultures, languages and identities without fear of direct or indirect violent threat. Integrative relations are both a cause and a consequence of such safe spaces and they will dominate destructive and threatening relations. Safe communities are characterised by institutions which facilitate cooperation, the non-violent resolution of conflict and peaceful social transformation. (Clements 1990: 7).

Like peace, security is viewed here as a process, as a struggle to maintain a reasonable standard of well-being for all people. Clements asks if there can be "any real security for anyone in a world that is so radically divided into rich and poor?", the answer to which is no, hence "security, democracy and equality are closely interlinked concepts" (Clements 1990: 19 and 14). Not unlike Booth and Shaw, Clements suggests that security ultimately rests with the power of individuals to make society as they wish it to be (Clements 1990: 7). This returns us to the question of the role of individuals (discussed in chapter 11).

A useful list of alternative norms that undergird these peace-infused notions of security comes from a conjunction of lists developed by Clements (1990) and Gurtov (1991). This serves as a useful juxtaposition to the norms of Realism listed in chapter 4, they are:

An optimistic view of human nature;

Order from processes of interaction and exchange rather than coercion;

Negotiation;

Depolarisation;

Demilitarisation;

Decentralisation;

Transcendence of enemy imaging;

Basic needs;

Human Rights;

Peace.

These norms are consistent with the normative position this thesis adopts (chapter 2). To this list it should be added that peace means more than war, humans are not

necessarily violent, and risks are not necessarily deliberately imposed dangers. Altogether, these norms undergird the human-centred approach to environmental security outlined below.

All of these approaches to security are 'dissident discourses' (Dalby 1996a). They are engaged in a conception of politics that transcends the state. They understand security not so much in the negative sense of protecting the status quo, but as the positive task of establishing and then maintaining basic human rights, justice and freedom. They conceptualise security in ways that are proactive, positive and non-violent. These dissident discourses are engaged in a reclamation of the concept of security to serve people and positive peace. These radical approaches are attuned to what Walker calls the "dialectical interplay between security and insecurity" in human affairs (1988: 126). Walker reminds us that vulnerability is not necessarily a negative phenomenon: "to be vulnerable is to be open. To be open is to create the opportunity for communication and exchange, for learning and commitment" (1988: 127). Security entails balancing risk and fear with trust and dialogue (after Giddens 1990); it is best attained through caring relationships and ethical life-political action.[5]

At the recent people's Conference on Alternative Security Systems in the Asia-Pacific a declaration was passed which encapsulates many of the themes of this discussion, and which points to the future of a critically aware theory and practice of security. The Declaration was produced by concerned people in the industrialising world, which reinforces the important point that "there is a genuine propensity" in these places "to link environmental security to personal and economic security" (O'Riordan 1995: 25). Hence it is hoped that this thesis and the following construction of environmental security is true to the concerns and needs of the most vulnerable of people. The Declaration of the Conference on Alternative Security Systems in the Asia Pacific said that:

> Security must be fundamentally redefined, democratised and reclaimed by people. It must replace narrow state, military or market interests with comprehensive human security which includes the social, cultural, gender, economic and environmental aspects of security. It must also recognise the need for peace-building and the prevention of violent conflict. This requires both a transformation of existing structures and relationships and the creation of new structures and relationships which include groups previously marginalised.

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[5] What is required, according to Ashley, is "the courage to admit that we simply do not know with certainty what we fear and to insist that this uncertainty should not in itself be a cause of generalised fear, for social mobilisation, for the amassing of resources in order to bring all time and space under control" (Ashley 1989: 311).

> Real security is based on establishing democratic relations among men and women, within societies, between people and the state and between states themselves, and within international institutions. Establishing substantive democracy is fundamental.
>
> To achieve real security we need to develop processes and institutions based on solidarity, participation, equity and respect to ensure that the individual and collective concerns of people - protection of life, livelihoods, communities, cultures and the environment - are central
>
> (Democratising Security: Declaration of the Conference on Alternative Security Systems in the Asia Pacific, 1997, available at Nautilus Institute website http://www.nautilus.org).

The remainder of this chapter advances a concept of environmental security that is consistent with this declaration, and with human security and peace.

10.3 Environmental Security for People

Human security is based on the following premises:

> The dynamics of globalisation and the end of the cold war present new opportunities for reclaiming security;
>
> Many people have legitimate day-to-day needs beyond that of freedom from warfare (for the most part a product of 'national security' anyway), and these needs are often not provided for by nation-states;
>
> Insecurity takes many forms and originated from many different sources, so approaches to human security must be diverse;
>
> Security as the discursive practice of fixing personal identity to the nation conditions individuals to support violent practices in the name of national security;
>
> Rich interpersonal relationships; a sense of belonging; a diversity of experiences; genuine participatory processes; emancipation; trust; a politics of inclusion rather than exclusion; responsibility to the Other; individual and group action; peace; justice; and non-violent negotiation and conversation are all important means to enhance human security;
>
> To achieve human security fundamental, proactive reform of modern beliefs and institutions is needed; reactive strategies are insufficient;
>
> Rethinking security means, most of all, rethinking politics.

These premises underlie this thesis' human-centred approach to environmental security.

This thesis' approach to environmental security seeks to overcome the problem of environmental insecurity as established in chapter 1. In this sense the ecological security issues identified in chapter 9 are symptoms and not causes of insecurity; they are not the fundamental problem, they are merely new

mechanisms that exacerbate the basic problem of human insecurity. So, this thesis understands environmental security to be the process of enhancing the resilience of those people who are most vulnerable to the effects of environmental degradation. This process must entail lessening the vulnerability of people to the full gamut of risks experienced in late modernity, including unemployment, direct violence (at all scales), poverty, and famine. Lessening vulnerability in this sense must entail radical reform of modern institutions which directly and indirectly generate risks, including the military, the nation-state, processes of production, excessive consumption, legal systems, political systems, and belief systems.

This human-centred environmental security concept places the welfare of people first, and prioritises the welfare of the most disadvantaged above all else. This is justified on moral grounds, and in a more pragmatic way because addressing the welfare of the most disadvantaged means addressing many of the future sources of environmental degradation; in Sachs' words: "protecting the rights of the most vulnerable members of our society ... is perhaps the best way we have of protecting the right of future generations to inherit a planet that is still worth inhabiting" (Sachs 1996: 151). However, let it not be forgotten that the responsibility for poverty and environmental degradation rests primarily with the well-off in industrialised countries.

This human-centred environmental security concept sees the enhancement of welfare, peace, and justice as the fundamental purpose of politics.[6] Peace and justice are the firmest pillars on which to build exactly the sort of authoritative yet genuinely legitimate institutions required for human and environmental security (Conca 1994b). Infusing environmental security with the notion of peace helps to see the entirety of insecurity-producing processes (Conca 1994b). Linking environmental security to peace in this way is supported by the recent linkage of environmental problems with human rights; for example, in 1990 the UN General Assembly agreed that "all individuals are entitled to live in an environment adequate for their health and well-being"; and in 1995 the UN Commission of Human Rights passed a resolution that "environmental damage has potentially negative effects on human rights and the enjoyment of life, health, and a

[6] Conversely, lessening environmental insecurity should be a primary aim of peace research (Pirages 1991b).

satisfactory standard of living" (both cited in Cherry 1996: 3).[7] This thesis' human-centred conceptualisation of environmental security is very much about the rights of all people to a healthy environment. Further, in so far as rights are meaningless without responsibilities, environmental security means all people have a responsibility to behave in such a way so as to not impinge on the rights of others to a healthy environment (hence the discussion of life politics in chapter 11).

This welfare, peace and justice approach has implications for the nation-state as the dominant site of politics. In this approach, the primary purpose of the nation-state is to meet the basic needs of all people. This means that the interests of the nation-state should be subordinate to the interests of people. Indeed, the state is not apart from, but is *of* the people (see chapter 11). Thus environmental insecurity is seen here not as a problem for the legitimacy and survival of modern institutions, but as a problem for which modern institutions are responsible. Those institutions that are most problematic, such as the military, are those that must be reformed first. This does not mean a naive hope that these will see the error of their ways and atone, it means thinking seriously and acting carefully to achieve gradual and progressive reform.

This human-centred conceptualisation of environmental security does not concern itself with the possibility that environmental degradation may induce violent conflict. This is not the most pressing problem, and in any event it pertains more the sources aspect of environmental degradation rather than to the more complex sinks aspect. This avoidance of environment-conflict linkages is supported by Gleditsch, who suggests that: "those who on the basis of the broad definition of environmental security deliberately disregard the question of armed conflict are in a sense on fairly safe ground" (Gleditsch 1998: 388). Removing the warfare aspect from environmental security removes the basis upon which Realism gains entry into the concept. Because rethinking security means rethinking politics, the continued saturation of contemporary politics with issues and metaphors of violence needs to be avoided.

In contrast to thinking about violent conflict, a human-centred conceptualisation of environmental security asserts the need for cooperation and

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[7] UN General Assembly resolution no. 45/94, 14 Dec 1990 Commission on Human Rights, 1996; and *Human Rights and the Environment: Report by the Secretary-General Prepared in Accordance with Commission Resolution 1995/14* (both in Cherry 1996).

inclusion to manage the environment for the equal benefit of all people and future generations. The sharing and negotiation of resources was integral to the sustainability of most successful pre-modern cultures (Bennett and Dahlberg 1990). The need for cooperative and inclusive approaches to environmental management is a key message of the 1992 Earth Summit (UNCED 1993). In Australia, cooperation, inclusion and conflict resolution are central to successful resource management institutions. This is demonstrated by high rates of community participation in Landcare and Total Catchment Management (Campbell 1994); it is proven in the effectiveness of intergovernmental institutional arrangements such as the Great Barrier Reef Marine Park Authority and the Murray Darling Basin Commission; and it underlies the success of informal non-government agreements such as the Cape York cooperative management agreement between Aboriginal, industry and green groups. Inclusion, mediation and cooperation are therefore key themes for environmental security.

This human-centred conceptualisation of environmental security is informed by ecological theory and biophysical science. These provide information about the mechanisms by which environmental injustices transpire, and, as suggested in the previous chapter, they offer a new basis for thinking about security and politics.

10.3.1 Defining environmental security

It is always difficult to reduce an holistic concept to a concise definition. Like all definitions, definitions of environmental security are problematic (Tennberg 1995). Nevertheless, it would be intellectually amiss to leave this thesis' definition open-ended. So environmental security is defined here as:

> The process of peacefully reducing human vulnerability to the effects (and risks) of human induced environmental degradation by addressing the root causes of environmental degradation.

Put another, more axiomatic way, environmental security is the process of minimising environmental insecurity (as understood in chapter 1).[8]

There is a danger that this definition dichotomises humans and nature, a problem that also vexes environmental security as 'securing the environment' (or ecological security). It is important to be clear, then, about the deeper inference of

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[8] In so far as insecurity is a product of interconnected processes, and a healthy environment prefigures all other forms of security, it is possible to understand environmental security as the universal and all-encompassing security concept of the future, as Dyer (1996) seeks to do. However credible, this thesis is reluctant to claim so much for a human-centred environmental security concept; a more humble approach is called for.

this definition. Humans are seen as nature rendered self conscious (Bookchin 1982, also see appendix I). This means, in Saurin's words, that humans are not counterposed to nature, they are "constitutive of nature" (1996: 83). Therefore "the wellbeing of humans must only be possible in a world where nature has its rightful place as a democratic partner in evolution" (O'Riordan 1989b: 79). Accordingly, the definition's reference to 'human induced environmental degradation' means not the degradation of an external or Other habitat, but of the habitat of humans themselves. So, environmental degradation can be read as human degradation. In this way this thesis is not opposed to definitions of environmental (or ecological) security which seek to make the biosphere the referent of security because securing the biosphere means securing the physical bases of human health and well-being. Nevertheless, the principal referent here is humans as this is arguably more politically instigative, which is to say that a concern for the environment *per se* is less likely to mobilise people to act.

This definition seeks to treat the underlying *causes* that create environmental degradation. It suggests that we can never absolutely achieve environmental security, and that like all forms of security, and indeed like peace and sustainability, environmental security is a target rather than a final condition. Defining environmental security as a *process* in this way overcomes the (Realist) strong equation of security with stasis. Security as a process means ongoing monitoring and adaptation of programmes and policies. In this way security is a proactive and adaptive process which is sensitive to change and seeks to peacefully manage change (rather than defend against it).

It was argued earlier (chapter 4) that to be useful any approach to security must be able to answer a number of basic questions. In response to the question - *whose security?* - the answer here is the security of the individual, and more immediately the security of those people who are most vulnerable to the effects of environmental degradation. In response to the question - *security from what?* - the answer is the impacts of environmental degradation on humans, including lack of clean water, malnutrition, inadequate access to energy for cooking and heating (most acute in the problem of fuelwood shortages); high infant mortality rates and maternal death rates; exposure to preventable debilitating or fatal illnesses; and greater exposure to risks such as floods, fires, earthquakes, tsunamis, and famines. This then leads to the question - *insecurity how?* - the answer to which is the exploitation and impoverishment of people by forces of capital (it is more complex

than this, see chapters 1 and 3). So, the problem is not humankind's struggle with nature, but humankind's struggle with the dynamics of its own cultures (de Wilde 1996).

10.3.2 Environmental security and sustainability

The concepts presently being used to address environmental problems are sustainable development and sustainability.[9] Sustainable development has a humanitarian element not unlike this thesis' approach to environmental security. It recognises that the problem lies in the disparities among people as well as the degradation of ecosystems (WCED 1987, UNCED 1993). The principle dilemma with sustainable development is the word *development*; it implies that development *per se* is not the problem, rather that it is the particular environmental effects of existing development practices that need to be addressed (see Redclift 1987, Sachs 1993).[10] Of course this depends on what one means by 'development'.[11] This difficulty is remarkably similar to the difficult use of the word 'security' in environmental security.

The concept of sustainability has evolved from sustainable development, and is now the preferred term of many because it (at least semantically) avoids the difficulty with the word development. Sustainability is defined by Pezzey as the "non-declining utility of a representative member of society for millennia into the future' (1992: 323). Sustainability is concerned with a number of issues, including the structure of the economy, discounting (of the future), depletion of natural resources and environmental degradation, population growth, and sectoral sustainability (Pezzey 1992). Exploitation an equity are, by Pezzey's reckoning at least, secondary concerns. Sustainability is still therefore largely an economic paradigm, albeit one which is highly critical of conventional neo-classical economics (Common 1995). Sustainability, too, has an "uncritical accumulation of

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[9] The concept of ecological modernisation could also be considered here, but it is more embryonic than that of environmental security, and it is far less popular than that of sustainable development or sustainability, or indeed environmental security (see Christoff 1996 and Mol 1996 for overviews).

[10] Nevertheless, the notion of sustainable development and the WCED and UNCED processes established a number of important points about the problem of environmental degradation, and also made a number of recommendations for action which the majority of states have agreed to implement (in principle). These concepts have been highly influential in the theory and practice of environmental issues ever since. For this reason some still continue to use the term (see note 11 below).

[11] Contrast, for example, the original statement on sustainable development - *Our Common Future* (WCED 1987) - with more progressive and Green interpretations such as those in a recent edited edition of *Environmental Politics* (O'Riordan and Voisey 1997a).

meanings" that renders it less prescriptive, yet paradoxically more popular (its ambiguity makes it safe to use) (O'Riordan and Jordan 1995: 192). So, sustainable development, sustainability, and environmental security are all plagued by an ambiguity which makes them amenable to appropriation by vested interests. This is nature of concepts - they are contested. The contestation of concepts is one of the ways in which society negotiates its values and goals. This is one of the valuable contributions of these three concepts.

This thesis' reformulated concept of environmental security differs from, but complements sustainability for a number of reasons. First, issues of exploitation and equity are primary rather than secondary concerns.[12] In this sense environmental security is compatible with the concept of environmental justice which argues that people are exposed to environmental hazards differentially.[13] Second, environmental security explores the juncture of security/foreign policy and the environment. This is an area less explicitly covered in sustainability, and it is this (original) explicit international focus that is one of environmental security's distinguishing characteristics. In this respect environmental security serves a useful function in that it facilitates communication between a diverse range of interests (Brock 1996). Third, environmental security is concerned with the environmental impacts of military activities and explores the possibility of greening the military. Fourth, environmental security adds to the Rio Declaration's assertion that peace and environmental protection are interdependent and indivisible (UNCED 1993). It does this by understanding environmental degradation to be the product of violence both direct and structural.

Perhaps the most important contribution of environmental security is its political dimension. Whereas sustainable development and sustainability are still largely concerned with economics (of development and *ecological* economics respectively), environmental security is fundamentally concerned with politics. The issue is not just one of the politics of security as addressed in most of this thesis, but also one of what a reformulated notion of security holds for politics itself. These political and policy aspects are discussed in chapter 11.

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[12] Although these are central in *Our Common Future's* account of sustainable development (WCED 1987).

[13] For a broad selection see Bullard (1993, 1994), Kelly (1990), Low and Gleeson (1998), and Sachs (1996).

10.3.3 Securitisation revisited

A final and notable distinction of environmental security as opposed to sustainability is that environmental security seeks to securitise environmental problems, thereby making them more important than other politicised issues. Environmental security as presented here agrees that environmental degradation is a security issue, but security is seen as *human* security. So, if there is any truth in the popular understanding that the state's most elemental function is to provide for the security of its citizens, then the state must respond to environmental insecurity with the same unrestrained vigour that it adopts to ensure military security. Environmental (human) security takes this security justification of the state seriously. It assumes that the most basic purpose of government is to ensure that the basic needs of its constituency are satisfied. This is the political intent of environmental security; it stems from the intuitive resonance and appeal of security, and it contests the meaning and practice of security because it is the favoured term of political discourse in this late modern era.

The question of whether it is valid to understand environmental problems as security problems recurs throughout any thoughtful discussion of environmental security. The dilemma should by now be apparent; securitising environmental issues runs the risk that the Realist security approach will co-opt and colonise the environmental agenda rather than respond positively to environmental problems (as has been demonstrated in chapter 7). For this reason critics of environmental security, such as Deudney (1992) and Brock (1991), suggest that it is dangerous to understand environmental problems as security issues. This thesis' position on this matter has been progressively uncovered in previous chapters. The contention of this thesis is that the problem is not the presentation of environmental problems as security issues, the problem is the meaning and practice of security in present times. Environmental security, wittingly or not, contests the legitimacy of the Realist conception of security; it points to the contradictions of security as the defence of territory and resistance to change. It seeks to work from within the prevailing Realist conception, in a way not unlike that suggested by Waever (1995), but to be successful it must do so with a strong sense of purpose and a solid theoretical base.

So, understanding environmental problems as security problems, it was argued in chapter 9, is a form of conceptual speculation, but one in which

environmentalists and peace activists stand to lose little given that political Realism dominates and appropriates all challenges to it anyway. Put another way, what legitimacy crises suggest is that the situation cannot deteriorate without there being fundamental change or collapse, which implies that the practice of political Realism (and capitalism) is on the brink and cannot, at least in the domestic context, extend its power further if it means further exacerbation of insecurity. Put yet another way, Realism's resistance to change cuts both ways; it may resist what this thesis would call a change for the better, but it may also resist a change for the worse. Realists like things as they are, too much peace means they have no cause for defending society, alternatively, too much chaos suggests a failure of the paradigm; in both instances Realism stands to lose legitimacy.

Therefore, in terms of the conceptual venture, having the concept of environmental security appropriated by Realism will not result in more insecurity (it simply means more strident contestation of the meaning of the concept is required). On the other hand, succeeding in the conceptual venture may mean a positive modification of the theory and practice of national security. It may also mean that national governments do take environmental problems more seriously, reduce defence budgets, and generally implement policies for a more peaceful and environmentally secure world. Brock thinks this dual goal of demilitarisation and upgrading policy is a case of "having one's cake and eating it", but if the analogy is appropriate, either the having or the eating is sufficient justification for the concept, but both is desirable (Brock 1996: 6). Alternatively, Realism may cease to use environmental security. This would be a less favourable outcome as it means the end of the discursive contest, and the interests of peace and the environment will need to be advocated through alternative discourses. This is perhaps the only real failure that may come from the project of environmental security.

The whole question of securitisation hinges, of course, on the meaning of 'security'. The security component of environmental security as understood here is human-centred as opposed to nation-centred. Indeed, it directly contests the legitimacy of national security by challenging notions of threats, risks and questioning who is at risk. In this sense environmental security is as much about contesting a defining feature of modernity (national security) as it is about posing a new concept for dealing with environmental problems. However, although this contest is a crucial function of environmental security, this thesis's reformulation

of the concept also seeks to serve as a genuine alternative to understanding and addressing environmental problems. It does this in part by using the notions of risk and resilience.[14] These are therefore worth revisiting in light of this human-centred approach, and as a precursor to considering questions of policy (chapter 11).

10.3.4 Risk

This thesis contends that security is a discourse of risk, and so a cursory understanding of risk (and vulnerability) is necessary to inform the substantive goal of reformulating environmental security. Risk is a subjectively interpreted and therefore highly political phenomenon (Handmer 1996a). It is clear that in the Realist approach to security, and therefore also to environmental security, those who identify the risks identify only those possibilities which may jeopardise their particular vested interests. Hence environmental security in U.S. security policy-discourse is concerned with those particular risks to the interests of the U.S. policy community, and not the risks that others in distant places experience. Similarly in hazards management, particular risks are identified, and others ignored, according to the priorities of those who set the agenda (Hewitt 1983, O'Riordan 1990, Rayner 1992). Rayner, for example, analyses risk from a cultural theory perspective and finds that - like the response of the U.S. to environmental security - "of all the things people can be worried about, they will be inclined to select for particular attention those risks that help to reinforce the social solidarity of their institutions" (Rayner 1992: 91). Hewitt also talks of the prevailing approach to risk and hazards in a way that might well refer to the dominant approach to environmental security: "its strength depends less upon its logic and internal sophistications than on its being a convenient productive 'world view' for certain dominant institutions and academic spokesmen. In other words it is, above all, a construct reflecting the shaping hand of a contemporary social order" (Hewitt 1983: 4). There is therefore more than one discourse of risk, and it seems that common to all are exclusions and inclusions, emphasises and biases which serve the interests of the already powerful. Talking about risks therefore requires

[14] Stern identifies with the view that security policy should focus on risk prevention and resilience enhancement: "security policy may thus be conceptualized as being proactively aimed at facilitating crisis prevention and coping capacity.. Coping capability includes designing flexible and robust decision-making and response systems that can be brought to bear to exploit opportunities for crisis mitigation through intervention measures" (Stern 1995: 225-226).

democratically 'negotiating' risk, and this is as true for environmental security as it is for hazards management (Handmer 1996a).

Needs at risk

This raises the need for some reflection on the reasons why this thesis finds particular risks and effects of environmental degradation to be problematic. In a general sense what this thesis seeks to do is reassert the moral imperative of meeting the needs of those people who have not benefited from modernity. It is possible to construct a rough typology of needs: there are basic health needs, basic social needs, equal opportunity needs, and relative consumption needs. Basic health needs are those things such as clean water, sufficient nutritious food, and access to a level of health and hygiene. These enable people to be free from unnecessary debilitating sickness. They also make death less a less likely prospect at any stage of a person's life (and more a factor of old age or remote chance) as is the case for most people in the industrialised world. That one fifth of the world's population do not have their basic health needs satisfied is the fundamental injustice and effect of environmental degradation with which this thesis is concerned. That these people are also extremely vulnerable to perturbations in weather or economics is also of great concern - these are risks proper. It would seem excessively crude for moral relativists to argue that these needs are not real, pressing, and their absence wholly unjust.

Basic social needs are those requirements for a meaningful existence. They include diversity of experience, close family and personal relationships, and a sense of responsibility (Boyden 1987). Many of these have been denied by modern ways of living. Equal opportunity needs are those requirements necessary for an individual to participate as an equal member in her particular society. These are related to Boyden's (1987 and see chapter 3) notion of technoaddiction; for example, in many industrialised societies having access to an automobile is necessary for an individual to gain employment and meet the demands of urban life. Relative consumption needs, then, are needs that in their absence will not result in unnecessary illness or death, nor unequal opportunity. This relates to consumption of luxury items, and will be discussed again in chapter 11.

The risks and effects that concern this thesis' definition of environmental security are those which are immediate and necessary to health and well-being (basic health needs). There are exclusions in this approach, namely that the needs

of the wealthy come last. However, inverting the priorities of the industrialised world and countering the culture of consumption in this way is morally defensible, and is a useful strategy to reveal the contradictions of modernity and to begin to address a better future for all people.

Effective risk management requires an holistic approach which connects technical and political strategies, and which involves all people in ways that are cumulatively preventative and proactive: "risk management decisions cannot be justified according to purely technical criteria, or even clinical judgement. Moral preferences, public consensus, and trust in participatory decision procedures also have important roles to play" (O'Riordan and Rayner 1991: 98).[15] This therefore points to social processes and democracy as means to lessen vulnerability (Blakie et al 1994). Similarly then, environmental security should seek to transcend the technocratic, typically modern, and reactive approach to risk. Instead, environmental security requires holistic strategies to prevent risk-generating activity (eg solar power to avoid burning fossil fuels which contribute to climatic instability) and to enhance resilience (eg strengthen social bonds, design slackness and flexibility in human systems to allow extra resources to be readily available when needed - see below). Environmental security is about risk, and risk needs to be democratically negotiated to determine the most urgent risks and the best ways of dealing with them. This argument is revisited in the following chapter.

10.3.5 Resilience

Resilience is the inverse of vulnerability, and vulnerability is a defining characteristic of insecurity. Resilience not only means being better able to cope with the risks of hazards, it also means being less vulnerable to the day-to-day effects of environmental degradation. This suggests a range of strategies. It also suggests that there are lessons that can be learned from hazards research, not least because hazards and disasters are events that happen to already vulnerable people (Blakie et al 1994).[16]

Vulnerability is a product of poverty, exclusion, marginalisation and inequities in material consumption; it is a function of the interface between political systems and economic systems (Blakie et al 1994, Pelling 1998). There are at least six global processes which contribute to vulnerability to hazards:

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[15] 'Trust' is a key component of strategies to deal with risk, see Giddens (1990).

[16] Indeed, "the hazard lies in social institutions, not acts of nature" (O'Riordan 1989b: 95).

population growth, rapid urban growth, land degradation and environmental losses (for example lost tree cover and coastal mangrove clearances), environmental change, war, and global economic processes (for example structural adjustment programs, liberalisation and foreign currency speculation) (Blakie et al 1994). People's vulnerability, then, is generated by social, economic and political processes; these are all central issues for environmental security.

The cyclone that struck the coastal region of Bangladesh in April 1991 demonstrated clearly the interdependence between environmental degradation, insecurity and vulnerability to hazards. Bangladesh is a low lying country and has in excess of 100 million people with a high population density. Given that the country is one of the world's poorest, this population density creates pressures which force the poorest people to live and work in the marginal and shifting coastal zone. This in turn places pressure on coastal ecosystems which are denuded of stabilising vegetation, and this magnifies the vulnerability of these people to environmental perturbations. The April 1991 cyclone battered the coastal zone for nine hours and with it came a storm surge that raised water levels along the coast by up to seven meters; 139,000 people were killed and up to 3 million were exposed to severe health risks; 118,000 acres of crops were damaged; 190,000 homes and 9,300 schools were destroyed; and over 3,000 freshwater wells were destroyed (AODRO 1991). A lack of physical and service infrastructure meant that many died from diseases and malnutrition after the event. The victims of this cyclone were already extremely insecure by any standard. Their vulnerability was fundamentally a function of poverty. The painful lesson (learned repeatedly elsewhere), is that enhancing security means eliminating poverty, and vice versa.

Vulnerability implies powerlessness, and so providing resilience means empowering people. As ecological theory informs security, vulnerability also means enhancing diversity (as discussed in chapter 9). There are various strategies required to promote diversity and empower people, including preservation of traditional communities and societies which tend to be more flexible and adaptable to environmental perturbations (Handmer and Dovers 1996: 486). Indeed, the notion of flexibility is integral to understanding how people manage their livelihoods in the face of pressure (a notion not adequately considered in the simplistic assumption that pressure leads to conflict) (Redclift 1997a). In research conducted in the Nigerian Sahel, for example, Adams and Mortimore (1997) have found that the main indigenous means to enhance resilience lie in flexible

livelihood strategies, including flexible use of labour, flexibility with respect to crop location in space and time, flexibility in terms of what crops are grown, and flexibility in the means of earning income. So, resilience (to hazards) is about the ability of community to draw on material and intangible resources for recovery to shocks; traditional coping strategies are thus just as relevant as institutional and technological strategies (Handmer 1996b). Flexibility is also achieved through designing some 'slackness' into human systems (Handmer and Dovers 1996). As a strategy to enhance resilience to natural hazards, fiscal and material resources left spare in the system can be easily directed to the affected areas, and people can be easily evacuated for the period of danger. This implies strategic vision in policy, and restraining from the dictum of optimum and maximal use of resources.

Other resilience bolstering strategies include: "a high standard of infrastructure, construction, housing, education, and health care; safe working conditions; tort law; consumer protection; independent media; fostering scientific and advocacy groups; a universal welfare system and access to affordable insurance; and low levels of poverty" (Handmer 1996b: 52). Resilience is also enhanced through access to land, water, trees, wild genes and other forms of biomass; basic standards of nutrition; rotating loan funds; common property resource systems; livestock restocking schemes; and grain and seed banks (Blakie et al 1994: 228-9). Reduction of vulnerability fundamentally involves making full use of social resources such as co-operatives, churches and self-help groups; it therefore requires *social diversity* and "full, day-to-day participation of ordinary people and their own popular organisations in the struggle to enlarge choice ... this participation must be asserted and protected as a right" (Blakie et al 1994: 238).

Resilience requires an inclusive and proactive approach to vulnerability reduction which emphasises partnerships and is multidisciplinary (Salter 1997, Handmer 1996b). Pervasive themes are networking, an open transparent planning process, cooperation, flexibility, and adaptability (Handmer 1996b). This inclusive and proactive resilience paradigm applies to environmental security because vulnerability "is deeply rooted, and any fundamental solutions involve political change, radical reform of the international economic system, and the development of public policy to protect rather than exploit nature and people"; upholding human rights is also integral (Blakie et al 1994: 233). So, short term strategies such as those discussed above are all important to enhance the resilience of people to the day-to-day effects of environmental degradation as well as to disasters, but

in the long-term reducing risk, vulnerability and insecurity requires fundamental changes in the institutions and beliefs of modernity. There will be no lasting environmental security unless these changes take place. At a minimum there needs to be changes in power relations, this can be achieved by improving democracy, enhancing political participation, and improving governance. These issues are explored in the following chapter.

10.4 Answering questions

Critics of human security (like ecological security) argue that if security is applied to every risk that humans face, then the notion of security become imprecise and inoperable. According to the proponents of a narrow security agenda, broadening the domain of security "would destroy its intellectual coherence and make it more difficult to devise solutions" (Walt 1991: 213). This criticism warrants serious attention. First, it is important to note, as Walker does, that traditional Realist accounts of security are also rife with "vague generalities about everything and nothing" (Walker 1997: 63). Thus, imprecision and generalisation are characteristics of the dominant approach no less than they are of alternative approaches. Second, as argued in the previous chapter, a concept such as ecological, or in this case environmental (human) security is neither imprecise nor inoperable as the referent of security; the risks and vulnerabilities, and the processes by which these transpire are clearly identifiable, and they have been for some time in the fields of development research, hazards research, peace research, and indeed more generally in post-Marxist and feminist types of analysis. Equally, responses to many of these issues are by now well known (see chapter 11). Nevertheless, there is still some validity in proving the coherence of the human-centred environmental security concept presented here. This can be done by answering some specific questions posed by two scholars - Mandel (1993) and Brock (1996). The perspectives of both differ; Mandel's approach is essentially consistent with neo-Realism, whereas Brock's is more critical. Thus their questions neatly frame the range of concerns about environmental security.

Mandel suggests that there are "a seemingly unending series of complex theoretical questions" concerning environmental security (although he does not answer these questions himself) (1993: 346). Despite predominantly reflecting what Mandel thinks environmental security to be (somewhere in the

conflict/national security nexus), these questions (all on p.346 of Mandel 1993) are worth answering in turn.

Q. Does protection of the territorial integrity of states mean protection of the natural environment and resources within that territory?

A. This is for the most part a misleading question. A government's *responsibility* is to the people it governs for. This entails conserving and maintaining ecological integrity within the state, and because this cannot be separated from the whole biosphere, it also demands a globally-oriented outlook. So, talking in terms of state boundaries is useful only in as much as it identifies a zone immediate of responsibility, but with environmental security the responsibility is global as much as it is national. Therefore environmental security means acting locally but within the context of global responsibility.

Q. Do force and violence in the national security context encompass force and violence toward nature rather than toward humans?

A. No. First, national security is not the primary referent of environmental security. Second, demilitarising security as this thesis seeks to do means moving beyond force and violence altogether. Third, whether Mandel means the state may respond *to* force and violence towards nature, or respond *by* considering the option of force and violence towards nature is unclear; however, in most cases environmental degradation is a by-product of economic activity and war rather than a deliberate outcome. So, 'force' is a misleading term for discussing environmental security.

Q. Is the preservation of human life - or the quality of human life - as important to national security as the preservation of state sovereignty?

A. The preservation of life and enhancing the quality of life is the goal of environmental security, and is the primary function and the ultimate justification of government. When government fails to do this it fails to be legitimate. The theory and practice of sovereignty is a part of the problem of environmental insecurity, and it must be de-sanctified in order for there to be environmental security (see chapter 9).

Q. Should external threats to national security include unintended consequences of resource exploitation or of environmental degradation by other states?

A. Again, the issue is not one of national security but of human security. Unintended consequences of resource use and other environmental problems are rarely generated in order to 'threaten' another group. However, they may well be the product of wilful behaviour, as in the case of Shell's destruction of the

homelands of the Ogoni people in Nigeria or BHP's pollution of the Ok Tedi River in Papua New Guinea. These are issues that environmental security should address, but not as national security threats.

Q. Are the prime adversaries in the context of environmental security defined as those nations engaged in the greatest amount of resource exploitation or environmental degradation with transnational spillover effects?

A. 'Adversaries' seems an inappropriate word. In an age of globalisation and transnational corporations those most responsible for environmental degradation, and hence environmental insecurity, are as much private corporations as they are nation-states. To the extent that consumers fuel demand for the products of this exploitation and degradation, consumption patterns are also to blame; this is to say that the enemy is Us as much as the Other. Indeed, in the industrialised world the enemy is far more Us and our corporations than it is Others and their governments. The Others, if not their always their governments, are not the threat but the victim. Thus there are clear limitations of thinking in simple 'national' and 'international' terms. Further, while issues with transnational spillover effects are meta-problems, some of which were understood as ecological security issues in the previous chapter, there are many small and large, local and global issues that might be identified as environmental security issues.

Q. Does the link within several nations between management of nuclear energy and management of nuclear arms necessarily entail national security consequences from reliance on nuclear power?

A. Yes, but it entails more than national security consequences, it also is fundamentally a human security problem (see chapter 9).

Q. How does the current mix of public and private control involved in oil exploitation and transfer affect national security?

A. Again, national security is not the primary issue. Further, there is some need to be wary of understanding oil as an environmental security issue regardless of context. According to the framework presented in chapter 6, oil is primarily a source or resource issue, it is only an environmental issue when considering the consequences of burning or spilling the oil. Nevertheless, Mandel's identification of the mix of public and private ownership of the oil supply chain seems valid. The proper solution to the environmental problems associated with oil lies in the shift to alternative renewable energy sources. The solution therefore lies in state sponsored renewable energy research and development, and in state-imposed price

disincentives to oil consumption (the most effective of which would be a carbon tax). This requires a strong degree of public involvement in the market.

The most telling point to emerge from Mandel's questions is that environmental security as conceived of here is *not primarily a national security* issue but *a human security issue*. In so far as national governments should above all else be concerned with maintaining the welfare of their constituents, the nation-state has grounds to deal with environmental insecurity, but not as an issue which involves conflict, threats and (scripted) malignant Others. Environmental security demands state responses to environmental degradation at home and abroad, including stronger regulation of the actions of nationally flagged transnational corporations. This necessitates stronger government on some issues, and conceding authority in others, which problematises the theory and practice of sovereignty. Because of the local-global dynamic, acting solely for the benefit of the domestic populace is insufficient to comprehensively address environmental insecurity within any given nation, and in any event, this will do little to assist the people whom are most insecure throughout the world.

A more interesting and perhaps challenging set of questions comes from Brock (all on page 3 of Brock 1996).

Q. What is the referent object of environmental security, the environment or security, environmental scarcity or violent conflict arising from environmental scarcity?

A. People and the environment in which they live. Issues of violent conflict are not the object of analysis. However, the processes that strive for environmental (human) security will eliminate many sources of violent conflict.

Q. What should be considered as a threat to environmental security? Restricted access to natural resources or pollution and degradation? If the latter, are pollution and degradation as such the problem or do they become a security concern only when they are crossing certain thresholds?

A. Any process which directly or indirectly restricts the satisfaction of an individual's basic needs. This therefore entails restricted access to water, land and food, as well as various forms - indeed most forms - of pollution and environmental degradation. These are security concerns when they affect the basic welfare and well-being of people. Nevertheless, there is a more subtle point here about 'thresholds', which is that any human activity consumes resources and contaminates sinks, so the issue is one of degree, or of the sustainability of collective human activity. One should not be overly distracted but this issue of

thresholds, it obscures the need to act now on unacceptable standards of insecurity. Thus environmental security is understood here as a process continually subject to refinement and adjustment rather than as an attempt to get under an ill-defined threshold. In this sense the problem of quantification is subordinate to the problem of inequality.

Q. Who would determine such thresholds, environmentalists or national security experts in unison with family planners?
A. Recognising that conceiving of the problem in terms of thresholds is less useful than conceiving of it as a process, determining the agenda is nevertheless a question worth considering. As they presently operate, there is little if any scope for national security experts in addressing the problem of environmental insecurity. The policy community should be diverse, comprising at a minimum those who are most vulnerable within and beyond the nation; those who are traditionally marginalised in policy discourse (including women, ethnic minorities and children); and those who have expertise in the fields of political economy, development, ecology and other biophysical sciences, emergency management, and economics. What is equally important is that politicians are made to hear and act on the advice it gets from this more diverse policy community, and that political actions are justified on humanitarian grounds rather than on the basis of rational economics or short-term political expediency. This of course also raises questions about accountability, public expectations, and institutional and individual responsibility. These issues are discussed in the following chapter.

Q. Who are the objects of environmental security? states? societies? people?
A. People first and foremost. However, these referent groups are not mutually exclusive. People are part of societies, cultures and communities, and may in some instances be considered to be members of a political grouping, be it a local political unit, a state, a bioregion, or the whole planet.

Q. Finally: Can there be environmental security at all, if we take into consideration that the environment has been changing throughout earth history?
A. While the history of insecurity presented in this thesis (chapter 3) makes clear that there has always been environmental insecurity in so far as people have always been at the whim of natural perturbations, the argument is that in adapting to these insecurities, at least in modern times, people have minimised insecurity in certain places at the expense of heightened vulnerability of other people in distant places. Hence Brock's question is somewhat misleading if we consider the spatial

as well as the temporal dimension to environmental insecurity. Further, conceived of as a process with no fixed end point, environmental security is less about being absolutely secure and rather about being relatively more secure. So the issue is one of decreasing the vulnerability of all people.

Brock's questions point to the difficulty of the politics and policies required for environmental security. However, these issues are no more vexing for sustainability, natural hazards management, or indeed many political and economic problems. Working through some of these difficulties is the subject of the following chapter.

10.5 Conclusions

This chapter has developed a human-centred (as opposed to a state-centred) concept of environmental security that is consistent with a range of critical approaches to security. The consistency arises from the shared understanding that security is intuitively about the stable provision of basic needs - needs which states and the system of states have hitherto failed to provide. A strong, human-centred concept of environmental security can better contest the meaning of security in a way which, despite the concerns of critics, stands to gain much by highlighting the inherent contradictions of national security, yet stands to lose little from a failure to succeed in this venture. It may also serve as a valuable alternative concept to sustainable development and sustainability by highlighting the political aspects of environmental problems, and by re-emphasising that environmental problems are valuably framed as problems of human vulnerability.

The key themes of this human-centred environmental concept are risk, resilience, peace, and basic needs. These are seen by the critical security literature, ecological theory, and the hazards literature to be issues that are best handled through democracy, diversity, inclusion and conversation. This human-centred environmental security concept brings the issues of peace and the environment together to realise anew that the a key challenge of our time is to develop "a set of social institutions in which responsibility and authority are distributed widely among the citizenry and in which all individuals are encouraged to develop their critical faculties" (Leiss 1972: 197). The following chapter seeks to explore the politics, policies, and forms of governance required to meet this challenge.

Chapter 11. Environmental Security for People: Implications for Politics, Policy, and Governance

11.1 Introduction

The previous chapter established the broad parameters of this thesis' human-centred conceptualisation of environmental security. This chapter explores the implications of this reformulated environmental security concept for politics, policy, and governance.

This chapter talks of policy in a very broad sense as "a purposive course of action followed by an actor or set of actors in dealing with a problem or matter of concern" (Anderson 1984: 3). It talks of institutions, broadly understood as "established orders comprising rule-bound and standardised behaviour patterns" (Jary and Jary 1995: 324), including organisations and regimes which "constrain activity, and shape expectations" (Keohane 1989: 163). This chapter also talks of governance, defined as "the complex mechanisms, processes and institutions through which citizens and groups articulate their interests, mediate their differences and exercise their legal rights and obligations" (UNDP 1997: 1). Finally, this thesis' understanding of politics was revealed in chapter 2 to be the business of deliberation and negotiation of the Good, or, in Rees' terms, the process of "mutual education, as the means of influencing choices through the constant process of communication ... with a view to defining the public good" (Rees 1991: 41).

This chapter seeks to explore possibilities for enhancing environmental security (ergo human security and peace) through a "revitalized" politics and better governance (Rees 1994: 171). It tackles "the hard structures of institutional power" which "exercise control over what people do" (Walker 1988: 137). This is necessary to make prescriptive policies work. Recent United Nations conferences on the environment have proposed a range of policies which, if implemented, would lessen environmental degradation and enhance environmental security. If, for example, the recommendations of the United Nations Conference on Environment and Development (UNCED 1993) were implemented in conjunction with those of the International Conference on Population and Development (ICPD 1994) and the Habitat II conference (UNCHS 1996), there would be more

environmental security (and thus more peace) for more people than at any time since the appearance of the first cities 5,000 years ago.[1] These documents contain most, if not all the necessary policy measures, and there is little point in this thesis restating or reworking these. Rather, this thesis seeks to address the impediments to implementing these policies which lie in the nature of contemporary politics, institutions, and structures of governance. The problem also lies in a lack of intent. Elliott summarises this argument, saying that the problem is "not in the strategies themselves but in the fact that those strategies have not yet been effectively operationalised because of the intervention of political and economic interests" (Elliott 1998: 244).

The most comprehensive support for this view that the problem is not the policies but the politics comes from the Earth Summit +5 special session of the United Nations. In reviewing the implementation of Agenda 21, the Earth Summit +5 special session noted the failure of the international system to act in the interests of sustainability (United Nations 1997). Addressing the Earth Summit + 5 conference, the Executive Director of Greenpeace was blunt on this matter on political failure:

> [Y]ou [national governments] have failed as yet to act. You have given in to commercial interests; you have put national interests above the welfare of future generations ... it has become fashionable to say that governments can do very little, and that all power now lies with unaccountable multinational companies and institutions in a newly globalised market. But let that not disguise the power and accountability which you, together, hold to impose environmental and social limits, controls and standards (Bode 1997: 1-3).

So, environmental problems need political solutions (Kakonen 1992b). The failure to act is therefore fundamentally failure of politics and governance, and it is these failures that this chapter begins to address.[2]

Describing the new politics and forms of governance that a human-centred concept of environmental security requires is extremely difficult, not least because "there is little agreement as to what a sustainable society would look like" (O'Riordan 1995: 28). However, some themes are well known. We should not create new and more powerful institutions that facilitate and exacerbate injustice (Conca 1994b). In this respect new free trade and investment agreements are

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[1] The various treaties and conventions arising from these conferences have been almost unanimously endorsed by all nation-states, this attests to the validity of their recommendations.

[2] Political failure is also the biggest obstacle to reducing vulnerability to hazards (see chapter 10).

undesirable given that these tend to enhance the economic power of the already powerful. Lasting and peaceful solutions will arise from a transformed discourse on social justice and Goodness instead of neo-liberal rationality (Rees 1994: 183).[3] This thesis contends that solutions lie in political forms that are inclusive and which discursively negotiate the Good.[4] Policy then becomes the implementation of this democratically and discursively negotiated Good.

Environmental security requires adaptive and responsive *processes* of governance rather than monolithic and all-encompassing institutions such as the nation-state. This entails "polycentric" institutional configurations (Pelling 1998: 1). A polycentric structure of governance implies, at a minimum, strengthening the coordinating and initiating capacity of intergovernmental organisations such as the United Nations; enhancing the roles of critical social movements and non-governmental organisations; and reforming - with a view to dissolving - nation-states and their shallow (if at all) democratic processes, their inflexible approach to sovereignty, and their narrow definition of security. This chapter addresses these concerns, and adds in a significant new element which has scarcely been considered in the context of environmental security - the role of the individual.[5]

Chapter 3 established many of the problems associated with modernity. Overcoming these is a huge theoretical and practical challenge. Thus far, two solutions have been proposed by critical scholars. First, it is widely recognised that individual action can alter the structures of power and the socially and environmentally damaging institutions of modernity. This is based on the premise that while structures influence agency, agency can influence structures (Giddens 1984). This view is advanced by scholars such as Murray Bookchin (1982), Robin Collingwood (1992), Mahatma Gandhi (1951), Anthony Giddens (1991), John Stuart Mill (1992), Ernst Schumacher (1974), and Arnold Toynbee (1966). Second, and not unrelated, in response to the emptying of political practice of moral and ethical concerns, and the hollowing out of the principle and practice of

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[3] Rees juxtaposes neo-liberal/economic rationalist concepts with those of social justice. The juxtaposition is a reminder of the unpacked assumptions in contemporary economistic political discourse, they also provide a framework for a consistent humanistic discourse. Examples include: efficiency to sufficiency; deregulation to social responsibility; free market to egalitarianism; investment to justice; profits to choices; interest to altruism; consumers to citizens; productivity to preservation; competition to cooperation; and assets to potential (Rees 1993: 297).

[4] As Dryzek (1990b), Giddens (1994) and Habermas (1990) have variously argued.

[5] Falk (1971) gives this some consideration, and Buckley (1996), Carroll (1989), Finger (1992) and Hay (1994) express the need for individual action.

democracy in modern times, it is considered that politics and democracy can be revitalised through enhanced communication, dialogue, or conversation between parties. This is the essence of Rees' politics as 'mutual education' (see above). This a view most commonly associated with Jurgen Habermas (1990), and it is generally shared by John Dryzek (1990b), Anthony Giddens (1994) and Moira Rayner (1997). The notion, however, can be traced back to the philosophy of the Ancient Greeks. This chapter discusses both of these approaches as means to overcome the problems of modernity, and therefore the problem of environmental insecurity. Both approaches are not unproblematic, and both draw on past ideas and contested theories and concepts; this, however, does not mean that they should be abandoned. These are the best and most persuasive approaches to date, and this thesis does not presume that it can do better.

This chapter therefore begins by exploring the role of individuals as agents for security. It then considers an array of options for domestic-oriented reforms within the nation-state. Next it explores what the nation-state can do to enhance dialogue and better governance between states, and it ends by considering a range of options for global governance. This chapter is imaginative and has an element of utopianism, it was argued in chapter 2 that this is a valid and necessary approach.

11.2 People, Politics, and Agency

A human-centred environmental security concept runs the risk of depicting people as passive recipients of strategies to promote environmental security. However, because shifting the referent object of security means rethinking politics, part of the task must be to rethink the role of people as actors deliberately seeking to shape social and political life; that is, as agents of security. Agency is defined as "the power of actors to operate independently of the determining constraints of social structure. The term is intended to convey the volitional, purposive nature of human activity as opposed to its constrained, determined aspects" (Jary and Jary 1995: 10). The difficulty with agency lies in the structure-agency dialectic; it is questionable that anyone is wholly 'independent', and the influence of institutions and ideologies on individual action should not be discounted because these do have real power. However, to advocate agency is to see power in a positive way as the ability of people, individually and collectively, to resist or reshape restrictive

and oppressive institutions and ideologies. Absent agency and it is difficult to identify another engine for the transformation of modernity.

This section begins by discussing relative consumption needs as these are the basis of much unnecessary consumption and associated environmental degradation. It then discusses the notion of 'life politics' which directly addresses the individual as a political agent.

11.2.1 Relative consumption needs

It is important to revisit the question of needs. It has been argued that environmental security entails securing every individual's basic health needs, which entails overcoming environmental degradation and insecurity. For this to occur, the relative consumption needs of wealthy people need to be addressed, as it is the satisfaction of these which - through economic and ecological processes - exploits poorer peoples in remote places as well as the degrades their environs.[6]

It was posited by the Frankfurt School that the gratification of consumptive needs elicits a more elaborate set of needs, thereby perpetuating a wasteful consumption/satisfaction cycle (Leiss 1972, Adorno and Horkheimer 1979). Marcuse understood that consumption suppresses people's real needs and creates a 'false consciousness':

> False needs are those which are superimposed upon the individual by particular social interests in his[her] repression: the needs which perpetuate toil, aggressiveness, misery, and injustice.... this happiness is not a condition which has to be maintained and protected if it serves to arrest the development of the ability (his own and others) to recognise the disease of the whole and grasp the chances of curing the disease. The result then is euphoria in unhappiness.
>
> The prevalence of repressive needs is a fact that must be undone in the interests of the happy individual as well as all those whose misery is the price of his satisfaction (Marcuse 1964: 5).

[6] It was argued in chapter 3 that the consumption of luxury items began with the production of an agricultural surplus and the emergence of the first cities, after which time consumption slowly displaced social needs as the basis of individual satisfaction and set in train a cycle a cycle of consumption and status that contributed to more excessive forms of environmental degradation. Over time this was exacerbated by technological advances and the expansion of the bourgeoisie. With the advent of colonisation and later industrialisation more luxury goods could be produced and the ecological and social costs of these were both extended across space and magnified in their impact.

It follows, then, that people can only satisfy their real interests by changing their way of life and "refusing" the delivery of material goods (Marcuse 1964: xviii).[7]

More recently, empirical studies have supported the understanding that consumption of luxury or non-basic goods and services is fuelled by the relativity of status that this confers. In 1990 *The Economist* magazine noted that while per capita income in the United States had steadily increased since 1973, middle-class Americans nevertheless perceived that living standards had stagnated or fallen (The Economist 1990). The implicit message was that the pleasure obtained from consumption had decreased, suggesting that consumer satisfaction is a relative phenomena; so people consume because others around them do (Lichtenberg 1996). Thus "it cannot be demonstrated that consuming more makes the representative individual happier" (Common 1996: 15).[8] There is thus a falsity in conventional economic, political and cultural wisdom which (erroneously) holds that more goods and services means more Good.

This point about wealth and welfare is demonstrated in a slightly different way by the UNDP's *Human Development Report* which compiles a Human Development Index (HDI) that measures welfare in terms of education, adjusted income and life expectancy. Comparing the HDI for numerous countries is instructive, for example: Switzerland has an HDI value of .926 (out of 1) with a GNP per capita of US$36,000, whereas New Zealand has an value HDI of .927 with a GNP per capita of US$13,000; South Africa has an HDI value of .649 with a GNP per capita of US$3,000, whereas Indonesia has an HDI value of .641 with a GNP per capita of US$700; and Senegal has an HDI value of .331 with a GNP per capita of US$750, whereas Nepal has an HDI value of .332 with a GNP per capita of US$190 (UNDP 1996). So, economic wealth is not synonymous with life richness.

Making the environmental dimension of this wealth/well-being paradox more explicit, Dovers (1994: 23) plots the HDI against extrasomatic energy use (remembering that the use of extrasomatic energy is the single best indicator of the stress humans place on the environment - see chapter 3). Dovers finds that gains in

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[7] This refusal is what Marcuse called 'the great denial' which resonates with life politics (following section). The is the protest against unnecessary repression through consumption, the struggle for the ultimate form of freedom, and practices that if ever universally upheld would be the death of capitalism (Marcuse 1956, 1964). The great denial was also a popular catch-cry associated with the 60s, embodied in the phrase 'tune in, turn on, and drop out'.

[8] A classic early text on this subject is Scitovsky (1976).

human development diminish above a certain level of energy use (the law of diminishing returns). Some countries are therefore able to deliver high levels of human well-being with relatively low levels of energy consumption. This is done through a diversification of economic, social and political systems which allow for welfare and well-being to be delivered by means other than increased consumption (Dovers 1994).

There are three key implications of this consumption/well-being paradox. First, the present consumer culture in the industrialised world is not merely ecologically destructive, but it is counterproductive to the genuine well-being of consumers. Second, welfare and well-being are better met (both ecologically and experientially) through the satisfaction of basic social needs such as an emotional support network for giving and receiving care; strong family ties; opportunities for extended community interaction; a diverse and stimulating environment; opportunities for creative expression and learning; opportunities for spontaneous behaviour; and a personal sense of involvement, purpose, belonging, and excitement (Boyden 1987: 79). Historically, these were the means to psychological health and satisfaction - consumption is a hollow substitute for these more fundamental and ecologically sustainable needs. Third, the claim that economic growth is the means to deliver greater satisfaction is unmasked, and "if growth does not deliver, then compromising it in order to protect the environment .. is much less of a problem" (Common 1996: 15). In essence then, that consumption and growth do not enhance the Good means that the core economic tenets of modernity are flawed.

This consumption/well-being paradox has profound implications for the behaviour of individuals in industrialised societies. First, it suggests that working more to earn more is counterproductive to happiness as it entails sacrificing the time required to meet basic social needs in return for more (less satisfying) consumer power. This is commonly expressed in the recognition of professionals that they do not get as much 'quality time' with their friends and families as they would like. Second, of course, seeking to meet basic social needs in lieu of greater consumption means consuming less resources and demanding less products whose manufacture pollutes the environment and exploits labour; hence Gandhi's observation that:

> If each retained possession only of what he needed, no one would be in want, and all would live in contentment .... The rich should take the initiative in dispossession with a view to a universal diffusion of the spirit of

> contentment .... Civilisation, in the real sense of the term, consists not in the multiplication, but in the deliberate and voluntary reduction of wants (Gandhi 1951: 46).

Third, in terms of unemployment, the present trend of fewer people doing more work does not serve the interests of the workers, and it deprives the unemployed of potential employment opportunities (see Rees and Rodley 1993, and Cox 1996 for more on this subject). The policy implication is to reduce working hours to create more jobs and enhance lifestyle. So the motivation for individuals as agents of security (to be political beings) stems from both a responsibility to the Other, and from an awareness that more goods does not mean more Good.

11.2.2 Life politics

'Life politics' is the particular label Giddens (1991) uses to describe the notion of the individual as a political agent. The broader rationale for life politics as a means to emancipation and to overcome insecurity is worth establishing:

> No one can doubt that reducing global inequalities is essential if long-term global security is to be won. An emancipatory process must be set in motion, although at the moment the mechanisms whereby this might be achieved are not very apparent.... a process of emancipation on the part of the world's poor could probably only be achieved if radical lifestyle changes were introduced in the developed countries. Emancipation presumes life-political transformation (Giddens 1991: 230).

Life politics begins from the recognition that political life is not just party politics; it includes community organising, media events, court actions, conversations in bars and restaurants, education initiatives, demonstrations, boycotts, working with the disadvantaged, strikes, and self-help groups (Dryzek 1997: 189, Walker 1988: 155). Life politics involves being an active participant in events that affect one's own and others' lives; it involves moving beyond passive consumption to deliberate action (it is thus the opposite of consumerism); it entails the deliberate acquisition of a political identity (Rees 1991: 43).

For Giddens, life politics is a means to redress the ontological insecurity and existential anxieties of individuals in late modernity (see chapter 3). He suggests that life politics entails renewed control of the lives and identities of the middle classes in the industrialised world, what Bookchin calls "the achievement of an autonomous personality and selfhood" (Bookchin 1982: 70). Life politics is therefore about individuals regaining a degree of control, because while structure makes agency, agency also makes structure; so "in forging their self-identities, no matter how local their specific contexts of action, individuals contribute to and

directly promote social influences that are global in their consequences and implications" (Giddens 1991: 2). This underlies the possibility that "the reflexive project of the self (can) be the very hinge of a transition to a global order beyond the current one" (Giddens, 1991: 223). In short, life politics is about agency influencing structure in personal and detailed ways to enhance the lives of the agents themselves at the same time as enhancing the lives of others; it is about individuals taking seriously the freedoms already available to them; it is about self-enhancing emancipation.[9]

Materially affluent people, particularly the middle classes of the industrialised states, have real economic and political power that derives from *lifestyle*; they have the luxury to choose how they wish to live.[10] It is therefore with these more privileged people that the most responsibility lies; not merely because they have more freedom, but also because it is their consumption and lifestyle habits that fuel the demand for products whose manufacture contributes to environmental degradation (and therefore environmental insecurity). Further, in as much as the production of these goods also frequently entails labour exploitation and the accumulation of power to corporations, those who most demand them are responsible for much oppression. As Massey describes it:

> The time-space-compression which is involved in producing and reproducing the daily lives of the comfortably-off in the first world societies .... the resources they draw on from all over the world to feed their lives .... may entail environmental consequences, or hit constraints, which will limit the lives of others before their own (Massey 1991: 26)

So, affluent people perpetuate the industrial-capitalist system and its ecological destruction through their consumer behaviour; they are thus complicit in structural violence: "in this sense to acknowledge (common) responsibility for its [the system's] power over us would be the key to breaking its spell" (Vogel 1996: 172).

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[9] Life politics is also a means and an ends to empowerment. Empowerment entails struggling to make sense of one's circumstances, appreciating that to influence and comprehend the world is a continuous (and difficult) process, and developing the freedom and ability to express oneself in spontaneous and creative ways (this latter point reinforces Boyden's basic social needs - see section 11.2.1) (Rees 1991: 11-12).

[10] It is important to note that 'choose' and 'choice' have been captured and interpreted in particular ways by neo-liberal economic discourse, where choice becomes the freedom to choose among goods and services, but does not entail the freedom to choose not to consume. Enhancing the diversity of goods and services to choose from is scripted as a principal benefit of neo-liberal economic policies. However, this is not real choice, nor real freedom, but, in fact, a form of enslavement.

It is also important to recognise that it will be easier for people to consume less if others around them are consuming less (Lichtenberg 1996). So, in terms of the relative deprivation of people in industrialising countries, the standard of consumption to which they aspire will be lower if the evident standard of consumption in the industrialised countries is lower.[11]

Life politics is founded on the Weberian notion of methodological individualism. It interprets this as the basis of emancipation and ethical life, rather than crudely reducing it to the principle of consumer sovereignty (neo-liberal economics), or rational autonomous 'man' (political Realism). Life politics is the enactment of an ethical life in which we identify ourselves with larger goals and moral causes as way to give purpose and meaning to our lives. According to Giddens, life politics is a politics of choice in which power is generative rather than hierarchical:

> Life politics concerns political issues which flow from processes of self-actualisation in post-traditional contexts, where globalising influences intrude deeply into the reflexive project of self, and conversely where processes of self-realisation influence global strategies (Giddens 1991: 214).

So, life politics is exercising choice in action to consciously affect the social order. Choice is integral to changing destructive habits and renouncing familiar, if destructive institutions (Toynbee 1966). The freedom of choice is a hallmark of freedom itself; to be free is to rationally exercise one's choices, and to be truly free means choosing to break the "fetishization of needs" (Bookchin 1982: 69).

The sort of problems that life politics is capable of addressing are those which do not easily fit within existing political frameworks, as Prins puts it:

> The ordinary waste in every kitchen and pumped from every car exhaust contributes to environmental stress in ways which make criteria of public or private origin irrelevant. In this sense environmental questions cut across all categories of political choice, including some which most people don't see as political at all - such as choosing to drive down to the shops" (Prins 1990: 715).

Life politics, then, is about wresting authority and control from experts (Collingwood 1992), and taking charge of political issues that defy the limitations of contemporary political processes. As Booth notes: "even in small and private decisions it is possible to make choices which help rather than hinder the building of a world community" (Booth 1991: 326). Life politics also involves

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[11] Thus U.S. President Clinton's reported comment to the Chinese President (see chapter 6) about the environmental dangers of increased consumption in China (to equal U.S. levels) implies not a suppression of the ability of the Chinese to consume, but a lowering of the standard of consumption, the highest of which is arguably in the U.S.

revolutionising political institutions; it involves generating new, or reforming existing structures of authority and governance. Exactly what these will look like depends on exactly how people participate in political life (Walker 1988). By acquiescing to democracy as the practice of voting every two or three years, people are acquiescing to their own disempowerment and consenting to the artificial distinction between politics and ordinary life (Bookchin 1982, Walker 1988). Politics and democracy must entail more than this, and life politics can force the shift towards a greater "personification" of politics (Bookchin 1982: 335). On this point Falk says: "it will be the cumulative impact of separate assertions of concern that form the basis of the one solid strategy for change that does not rest on the tactics of desperation" (Falk 1971: 444).

As well as having the potential to resist or reform economic and political institutions, life politics is integral to effecting a change in the culture which has exacerbated environmental insecurity. The need for cultural change is expressed by Boyden:

> It is only through our capacity for culture that we can hope to achieve the kind of reorganisation that will be necessary to ensure the protection of ecosystems, local and global, and the well-being of humans the world over. It follows that the most immediate and urgent task facing humanity today is to apply our aptitude for culture in a new way - using it, in fact, to control culture itself (Boyden 1992: 251).

Culture is a dialectical phenomenon, "a malleable entity in which there is continuous feedback" (Wilkening 1998: 4). A key driver of modern culture is advertising, which actively fosters the recognition of an individual's relative deprivation. However, advertising is effective only for as long as consumers respond positively. By not responding by not consuming, individuals acting as political agents can change the culture industry and can assert a new set of cultural norms such as frugality and self-sufficiency.

Life politics is a new label for an old idea. Greek philosophy, for example, understood that an ethical life is a Good life, and, as suggested in the introduction to this chapter, various scholars have implored us to live simply. Feminists have also long recognised that the personal is political (see chapter 2). Gandhi, too, was aware that the individual is able to "defy the whole might of an unjust empire to

save his honour, his religion, his soul, and lay the foundation for the empire's fall or its regeneration" (cited in Paggi and Pinzauti 1985: 40).[12]

There are numerous obstacles to 'life politics'. The first is that alternative paths and lifestyles are hard to see, and the more radical the choice the more difficult the implementation.[13] It is difficult to picture alternatives to our world because even our imagination is to a large degree conditioned by experience. Thinking seriously about escaping the modern capitalist system therefore involves engaging in intensely difficult questions about possible futures:

> To rethink the meaning of security, or development, or democracy is to enter upon very difficult conceptual terrain. It is to move from what is to what might be. It is to strain the limits of prevailing categories and to wrench enormously influential concepts out of their present contexts (Walker 1988: 142).

A collective and sustained effort at imagination and "utopian dialogue" is therefore necessary (Bookchin 1982: 334).

A second obstacle is technological entrapment, or in Boyden's terms, technoaddiction - which determines equal opportunity needs (see chapter 3). The concept is not hard to grasp but has profound importance. Put as a question, it asks - *what can we do without?* Achieving environmental security involves finding substitutes for the ecologically and socially damaging technologies to which modern societies are addicted. This is a question for policy and technology, but the impetus for reform must come from the general public through the generation of demand for alternatives to be supplied through the market and by the state; this is why life politics is generative.

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[12] Collingwood (1992) would endorse life politics, understanding it to be the politics of civilisation. He identifies a need for people to act on the will for the Good, for not acting is the will to barbarism (Collingwood 1992: 307). In these terms being civilised means living dialectically, that is "the constant endeavour to convert every occasion of non-agreement into an occasion of agreement" (Collingwood 1992: 326). This is supported by O'Riordan's claim that "the challenge of modern environmentalism is essentially the search for mediation - an outcome that for many can only be found by consciously applying one's whole being to the ultimate meaning of existence (O'Riordan 1976: vi - vii). This foreshadows the theme of communicative action discussed later in this chapter.

[13] In modern society difference is tolerable so long as it is socially sanctioned and confluent with the capitalist order. Those who are socially shunned - for example gypsies, vagrants, and some of Australia's indigenous people - *do not* live by the creeds of ownership, labour, high consumption, planning, status and acceptance. These people radically challenge the modern experience of the life world, they threaten the very order of modernity; how could anyone not sacrifice their lives for convertible sports cars, brick veneers and white goods?

A third obstacle is the insufficient demonstration of the links between individuals, social structures, ecological damage and structural violence (interdependence). As Agenda 21 noted:

> There is still a considerable lack of awareness of the interrelated nature of all human activities and the environment due to inaccurate or insufficient information.... There is a need to increase public sensitivity to environment and development problems and involvement in their solutions to foster a sense of personal environmental responsibility and greater motivation and commitment towards sustainable development. (Agenda 21, 36.8, UNCED 1993)

This suggests that for life politics to have a cumulative impact there needs to be growth in the provision of enabling information, and the demonstration of alternative lifestyles. That education and information provision is important is underscored by Agenda 21:

> Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues .... it is also critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviours consistent with sustainable development (Agenda 21, 36.3, UNCED 1993)

Therefore, one important prerequisite for life politics is to get information fully active and to use modern communications "to force changes in the public imagination" (Prins 1990: 729).

11.2.3 Doing life politics

The general goal of life political action should be to consume less, to consume smarter, and to be more involved in political processes from the local to the global level. It is also important for individuals to set examples and disseminate information - this does not mean preach, it means demonstration in everyday acts, and facilitating awareness. The ultimate aim of such action is to shift culture from one of consumption to one of frugality, self-sufficiency, and caring. Falk suggests that the secret is to begin *somewhere*: "with a concrete and personal act, perhaps located in the mind, in one's daily routine, or in one's neighbourhood. The early acts should be close at hand, and gradually the circles of effect should be expanded" (Falk 1971: 19). Specific actions might include:

> Negotiating to work only as much as is necessary to provide for basic needs. This makes more time available to spend with friends and family and to engage in community and environmental activities. It also makes work available for others;
>
> Trying to be as self-sufficient as possible by growing vegetables, rearing poultry, using home-based renewable energy sources, better housing design, recycling wastes and other permaculture activities;

Investing in green energy and ethical investment portfolios, as well as seeking to exert greater control over pension schemes (a large source of floating capital - see Rifkin 1991);

Taking public transport, cycling or walking as modes of transport;

Spending more time with one's family and children;

Eating less energy and resource intensive foodstuffs. This entails consuming more fresh fruit, vegetables and grains, and less meat and frozen goods. It also involves selecting products with minimal packaging;

Boycotting certain products and companies whose practices are known to environmentally destructive and socially damaging, as well as favouring those which are cleaner, greener and more ethical;[14]

Supporting local employment-intensive businesses;

Becoming involved in local politics and community support programs (schooling, health care and housing for the homeless for example), and engaging with local and global advocacy groups;

Donating to charities;

Lobbying governments on a range of issues, for example: for land reform programs; for greater contributions to foreign aid; for better public transport; for renewable energy schemes; for reductions in the defence budget; for better education; for a carbon tax; for schemes to discourage excessive consumption; for international exchanges of people; for more stringent environmental laws; for the protection of workers rights; for financial and legislative support of local and transnational political organisations; and to ratify and implement existing international treaties on the environment.

11.2.4 Conclusions

Individuals in the industrialised world have a moral responsibility to be frugal. Less consumption of status goods and more time invested in social needs enhances personal welfare and well-being, it also helps people to regain control of their own lives and to bolster individual identity and ontological security. Conscious reform of lifestyle in this way helps reshape modern institutions. Action of this kind is political action that will enhance environmental security. It is important to recognise, though, that institutional power can be inimical to individual action, and so the following section seeks to begin to address the difficult task of institutional reform (particularly of institutions of governance). Further, social movements (discussed below) can enhance the ability of people to act by providing information that helps motivate and implement action, and they provide a commonality of purpose that runs counter to the social atomisation affected by capitalism.

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[14] There is thus an element of green consumerism in life politics, but life politics is more encompassing than this (Elkington and Hailes 1988).

The individual is an important, overlooked and under-theorised site of politics. Exploring the issue of the individual as a political actor is integral to the challenge of rethinking the political implications of any human-centred security concept. The following section seeks to consider what policies existing political institutions might need to pursue to bring about a more environmentally secure world; this entails new policies and reform of existing policies. Politically aware individuals must demand these changes, and in this respect this discussion about individuals as agents of security satisfies the often overlooked issue of the politics of policy.

11.3 Policies and Governance for Environmental Security

Describing the characteristics of a human-centred environmental security concept is perhaps easier than determining what this means policy and governance in the future. Dryzek provides a timely warning here:

> If the twentieth century holds one political lesson, it is that we should beware of anyone peddling .. blueprints, be they socialist paradises, fascist Reichs to last a thousand years, or free market utopias popularized in the Anglo-American world in the 1980's (Dryzek 1997: 192).

Further, there is much danger in speaking for other people as this thesis does. Ultimately the only policy recommendation this thesis confidently makes is that those people who are most vulnerable should be heard, and their interests acted upon by those who have the power to act. So, although conscious of the need to make recommendations, what follows should be seen as tentative suggestions that can serve as a basis for future dialogue.

It is clear from previous chapters that the nation-state cannot be allowed to continue to appropriate environmental security to perpetuate its own power and to avert legitimacy crises. Preventing this appropriation is the most valuable function of critical environmental security analyses such as this thesis. Nevertheless, the nation-state is still the most powerful of all formal political institutions. So, efforts to enhance environmental security will be more effective and more rapid if the nation-state is positively involved, however unpalatable this may be.[15] Indeed, it is

[15] On this key point this discussion departs from the critical and obstinate perspective entailed in the works of, say, Marcuse and Bookchin . There is a need for pragmatic engagement with the state, although we might wish otherwise. The distinction is essentially one of positioning, Bookchin and Marcuse stand outside the system and seek its reform from the exterior, whereas others seek reform from within. Neither approach is likely to be

possible that life politics will fail so long as elites in the nation-state refuse to relinquish their monopolisation of power (Falk 1982b). When talking of policy, then, this section is primarily speaking about national policy, and more properly it is concerned with policies designed to bring about more effective governance throughout the world. Although this is a long-term agenda, this thesis contends that in the interim national governments should foster and facilitate a form of politics and governance that is driven from the bottom-up, is consistent with needs of people, and which is consistent across institutions and scales. The ultimate goal (like the purpose of engaging with the military - chapter 8), is to progressively transform the state with a view to its dissolution, or to a radical change in its current nature such that it becomes but one of many equally weighted institutions of governance.

The intent of this discussion is to see political power distributed to those institutions and groups which are most capable of acting to enhance environmental security. The premise here is that "governance is too important to leave to governments alone" (Renner 1997: 153). What is required, then, are institutions that encourage reflection, dialogue, and learning, and which enhance social and political awareness (Rees 1995: 287). This involves more than subsidiarity as the process of shifting authority downward, it also involves enhancing the authority of global institutions (such as the United Nations), transnational non-governmental organisations, and critical social movements.[16]

This power shifting strategy involves moving beyond the jigsaw-like political geography of the modern world where virtually all space is sovereign and boundaries are fixed, and where the state is removed from the people and its responsibility for one space means responsibility for all issues within but not beyond that space. A new politics for a new conception of security means imagining an issue-sensitive, adaptive, deterritorialised and multi-layered system of governance by people and for people, rather than by distanced, territorial institutions motivated by power for power's sake. The ecological vision of politics as discussed in chapter 9 has relevance here. Ultimately what is necessary is a dissolution of national power through a progressive relinquishment of national

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successful, critiques and alternatives posed from without are as necessary, and complement, cajoling from within. But the critical point, to return the opening sentence, is that *the state* cannot be ignored and *must be engaged.*

[16] Subsidiarity does not necessarily means shifting authority to the lowest possible political level (ie to local government), it more generally refers to governance at the appropriate level (Graeger 1996).

power. In this approach the nation-state is a broker, facilitator and conduit for the new politics of environmental security. The state as a conduit in this sense means facilitating governance from below, that is fostering bottom- up representation of people from the local through to the global level. This is the inverse of the present trend, noted by O'Tuathail et al (1998), whereby the state increasingly acts as a conduit for top-down implementation of the rules and requirements of the global economy.

An alternative and complementary intent of the following discussion, and the discussion of life politics, is to foster a political climate, and institutions, which are conducive to communicative action (Habermas 1990), or discursive democracy (Dryzek 1990b).[17] A crude summary of communicative action is that it is the process whereby through communication conceptions of the Good are (in effect discursively/democratically) determined. Communicative action means reinstating politics as the process of consensually agreeing to the Good, and policy as the means to make the Good happen.[18] Communicative action means authority is accorded solely on the basis of a reasoned and persuasive argument, and policies have to be continually justified in and of themselves rather than on the basis of the power of the proponent. Communicative action arises through life politics and the explicit justification of our actions; however, it also requires enabling institutions and practices (Vogel 1996: 173). Institutions which are non-hierarchical and non-discriminatory are essentially conducive to communicative action. So, the polycentric institutional and political forms that this discussion seeks to foster are consistent with the needs of communicative action. This should not be surprising given that communicative action and a human-centred environmental security concept both fundamentally see inclusion and dialogue as the paths to peace (see the comments on democracy below). To argue for greater inclusion of diverse interests in governance processes may well be consistent with a 'liberal' ideal of politics (note, though, that like 'democracy', 'liberal' is a contestable category), however, to argue *against* greater inclusion is to argue for a form of totalitarianism. Finally, communicative action is unlikely to ever be perfect, and the prescriptions made below are unlikely to do justice to this imperfect idea.

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[17] Note that these are not necessarily the same, but the principles of communication and negotiation are common.

[18] Thus communicative power differs from administrative power, the latter being the more dominant feature of politics in modernity, and communicative rationality differs from the efficient implementation (of blind criteria) of instrumental rationality (Habermas 1990).

However, if these would serve to enable a more communicatively rational political process, then they are worth proposing.

The philosophy of greater inclusion implicitly informs the trend toward greater stakeholder involvement in environmental (and cultural heritage) management in Australia. The success of Australia's Landcare movement, which has some 4,000 district scale groups engaged in education, investigation and demonstration, is contingent upon the active involvement of a diverse range of people who have a stake in land degradation (Campbell 1994, Martin and Woodhill 1995, Dovers 1998). In Australia, a philosophy of inclusion underlies other environmental management processes such as Total Catchment Management, environmental policy formulation processes such as the National Rangelands Strategy, and environmental management institutions such as the Great Barrier Reef Marine Park Authority (Dovers 1998). These processes mirror the intent and illustrate the difficulties of involving a diverse range of interests in governance processes. One of the principal difficulties, which supports the need for communicative action, is the absence of a sophisticated dialogue on goals and values. Recent research suggests that if there is to be a more diverse range of inputs into environmental governance, there needs to be enhanced dialogue about what is to be governed and for whom (Ellemor 1998). Although the principle of inclusion underlies these innovative processes, the theoretical justification is generally absent, and the coordination of efforts is generally very poor. It is interesting that practice is leading theory here, nevertheless, more theoretical awareness can enhance practice.

Environmental security demands policies to promote good governance from the local to the global scale. Good governance, it is increasingly recognised, is vital for the eradication of poverty, reducing environmental degradation, and increasing the welfare of people. Good governance is characterised by: effective participation and inclusion; transparency; responsiveness; strategic vision; respect for human rights; a capacity to learn and to adapt; receptiveness to global and local requirements; reliance on education, conversation and persuasion; meeting the needs of the most deprived; and accountability (after COGG 1995, Falk 1987, Haas and Haas 1995, UNDP 1997). These are all mutually reinforcing and interdependent. Good governance requires leadership and the courage to implement necessary reforms (COGG 1995, O'Riordan and Voisey 1997b). Good governance should seek to empower people; to foster cooperation and consensus;

to foster ownership of the political process; to advance equity; to respect life and liberty; to meet present needs without compromising the satisfaction of future generations' needs; to promote the rule of law; to enhance people's capabilities; to protect rights and promote responsibilities; and to provide stability and certainty (after COGG 1995 and UNDP 1997). [19] These are all necessary for environmental security. Consistent with the argument made in chapter 9 (that diversity is a key to resilience), a more diverse array of institutions is also necessary for good and stable governance for environmental security.[20]

A simple framework for thinking about the focus of national policies for environmental security identifies political action above, below and between nation-states. The distinction should not be read as a demarcation of rigid boundaries, zones or scales of politics. It should by now be apparent that this thesis sees politics in holistic and dialectical terms where institutions are temporary manifestations - reflections and refractions - of the ongoing and ever changing milieu of human behaviour. So the categories that will now be deployed are an extremely loose and imperfect means to provide some nominal order for the purposes of discussion. Again, this discussion is tentative and exploratory and makes no pretences to being a comprehensive blueprint. Again, the focus of discussion here is not on specific policies, but on what the nation-state can do to assist the transition to a political order capable of enhancing environmental security. Finally, it is important to note that the author's experience with the Australian political system inevitably conditions these observations. Nevertheless, the recommendations being made here are intended to be generically applicable to all states, although different places and contexts mean flexibility in implementation will be necessary.

An important caveat is that the following discussion assumes the need for democratic political systems. There are two dimensions to democracy (itself a contestable concept); first, it is a vehicle for the representation of diverse interests; second, and consistent with communicative action (see above), it is a way of creating a public arena in which controversial issues are handled through dialogue and negotiation rather than through the use of power and/or force (Giddens 1994: 16). Both are necessary for democracy to be peaceful. This does not mean that there is any ideal system of governance, and certainly most present democratic

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[19] 'For peace and plenty may be had to some extent without law and order; but with law and order they are ensured, and abundantly" (Collingwood 1992: 333).

[20] As well more social and cultural diversity.

systems are less than ideal (largely because the principles of inclusion and dialogue are often not fully upheld). Nevertheless, the aim of revitalising politics and the crucial need to alleviate poverty will be near impossible in an autocratic political system: "democracy provides the environment within which the fundamental rights of citizens are best safeguarded and offers the most favourable foundation for peace and stability" (COGG 1995: 337). As Giddens notes, despite its flaws, democracy is the best system there is at present, so "are there any political thinkers today .. who are not, in one sense or another, democrats?" (Giddens 1994: 104). The following discussion therefore requires a degree of democracy to be present, but once present, the recommendations seek to significantly enlarge the scope for genuine input from people. The (optimistic) assumption here is that more participatory forms of politics means more environmental security.

11.3.1 Below

National policy has a crucial role to play if the full potential of life politics is to be realised, for while life politics is important for better policy, policy is also important to encourage life politics. Crucial here is the reform of domestic political systems to enhance participation. This is a complex area, but the general direction should be towards allowing (not deregulating) trade unions and acting in the interests of the protection of labour; more forums and opportunities for people to participate and have their voices heard; more accountability of political leaders to justify their policies in terms of the negotiated values of the state; greater integration of political values into economic policies (including access to credit on fair terms for poor and disadvantaged groups, and approaching technology transfers as unencumbered aid rather than as exploitation of comparative advantage); and a model of politics based on honest conversation rather than on crude argumentation and sophistry (see Rayner 1997).[21]

To enhance the politicisation of society it is vital that women occupy 50% of seats in a country's governing body, and hold 50% of public service positions.

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[21] Policies that put disincentives on high levels of consumption of resources and energy through taxation are needed to complement the promotion of environmentally benign activities (see O'Riordan 1996). Perhaps the most comprehensive single policy option here would be to introduce a carbon tax as the principal means of revenue raising (see Common 1995). As well as taxing environmentally damaging activities it might also be necessary to tax the *promotion* of environmentally damaging activities (Pezzey 1992). There are also good grounds for considering that *more taxation* is necessary for peace, justice and security (Rees 1993). On aid and environmental security see Goldstone (1996b).

[22] Policies should advance an equal gender balance in private enterprises as well. It is also vital that indigenous people have a greater and more formal say in governance. At a minimum, indigenous people should be given a percentage of seats in a state's legislature; even 5% of seats would facilitate more lobbying power and make indigenous concerns heard. Of course, indigenous people should be represented proportionally, but in states where indigenous people are a minority and do not have a voice, the above recommendation would ensure a minimum standard of access. This might be extended to other marginalised groups as well.

More autonomous local-level governance is necessary if people are to participate directly on issues which affect them intimately. Local governments are key players in empowering people and in facilitating the social and infrastructural requirements to enhance community resilience. Local governments are frequently (although not always) effective environmental stewards, and are well positioned to observe the social and environmental effects of private enterprise. They are also integral to ensure that developments within their jurisdictions have the approval and meet the needs of local people. However, local governments must ensure that developments within their jurisdiction do not to harm others in more distant places; hence O'Riordan and Rayner's suggestion to invert the catch-phrase 'think globally: act locally' to 'think locally: act globally' (O'Riordan and Rayner 1991: 97). In short, because most things happen in specific locales, good governance is needed at the local level.

There is also a need for greater input from young people into governance processes. States should sponsor a system that encourages youth involvement and allows young people to have input into decision making. As an example, there could be a youth parliament comprised of delegates from secondary schools which sits three or four times a year, 'adult' members of the legislature could attend, and it might be desirable for the youth parliament to hold seat(s) in the national legislature. Lowering the voting age would also be a useful initiative. Similarly, local governments could have a more regular forum, and could be represented in the national legislature. There is also scope for input into the legislative and policy making process by trade unions. Further, there is merit in the idea of an

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[22] This should not obscure the need to include consideration of issues of gender. Focusing on the need to include women tends to marginalise consideration of the responsibilities of men, and the whole issue of constructions and reproductions of gender relations (Bretherton 1998).

international body such as the United Nations having a seat in the national legislature.

A more radical suggestion is that international and domestic non-governmental organisations (NGOs) have a formal place in the political process. This might take the form of, say, government sponsored 'embassies' for NGOs which have a certain (paying) constituency. So, for example, if Greenpeace has more than 3% of a population who pay membership fees, it would be entitled to government support and opportunities to participate in the diplomatic process. Taken further, the NGOs who qualify under such a scheme could have a similar forum to that of local governments and young people, and might also be similarly entitled to seat(s) in the legislature. The role of NGOs and other social groups is discussed further in the following sub-section.

All of these proposals seek to enhance security by improving the opportunities for people to be represented, and by creating multiple channels and multiple inputs into the making of policy.[23] More diverse voices hopefully means less exclusion. Further, involvement of NGO, student, trade union, local government and indigenous groups (for example) in the political process would stimulate these groups to actively elicit responses from people on a wide range of issues. Political cynics might groan, what is needed, it could be argued, is less rather than more politics, but this depends on the spirit of politics. The difficulty in most liberal-democracies is that politics is about promoting economic policy over social policy; promoting the ideology of crass neo-liberalism, described by Rees as "an economic aspirin, a sort of pill for all seasons to be prescribed by politicians of any persuasion" (Rees 1994: 174); and protecting the interests of big business and the power of money ahead of the interests of marginalised people. The problems of contemporary liberal-democratic politics are compounded by parties seeking re-election in short-term electoral cycles, and the dominance of big parties such that "soundbites and inter-party squabbling reduce the chance of getting serious long-term strategic issues into any meaningful political programme" (O'Riordan and Voisey 1997b: 176). In effect, the problem is that national politics is currently

[23] Of course this call for greater inclusion of alternative perspectives need not imply that all included groups hold to the values and interests of peace and environmental security in the way that this thesis does. However, it is assumed that the majority of interest will be for the Good, an assumption that seems supported by the general progressive and positive interests advanced by most NGOs and civil society groups. This assumption arguably underlies most theories which advocate greater inclusion and conversation in political processes, including Habermas' communicative action (1990), Dryzek's discursive democracy (1990b), and Giddens' dialogic democracy (1994).

about the pursuit of power for the sake of power, and that powerful parties have become progressively more powerful, which is arguably a *regression* of politics. It is important to imagine then, a political context which is more diverse, and more populated by people with political concerns rather than by politicians with token concerns. In this sense life politics is a very important component of this new politics.

11.3.2 In between

One of the positive aspects of globalisation is the 'bottom-up' proliferation of 'contemporary social movements' (Walker and Mendlovitz 1987), also known as 'critical social movements' (Walker 1988). These are "an assemblage of individuals linked intersubjectively to one another, based on shared identity and a common fabric of relations and practices" with "some degree of collective consciousness" (Latham 1996: 101).[24] The upsurge of citizen action through these groups has been "a salient phenomenon" of political life and environmental restoration initiatives in recent times (Gordenker and Weiss 1995: 364). The phenomenon of social movements has caught the attention of critical theorists, including Habermas, who identifies these as carriers of a communicative ethic, not least because they tend to debate their identity, negotiate their actions, hold to the principles of free discourse, and are not interested in reaching power but in redistributing it (Habermas 1981a, 1990). Giddens says the value of social movements lies in their "remoralization of a sphere of life denuded of moral meaning" (1985a: 320), and Beck identifies these as "the new constellation of a global subpolitics" (1996: 17).[25]

It is tempting to identify these as the basis of 'global civil society' and the foundation of a new form of governance (Lipschutz and Mayer 1996). However, the value of these groups needs to be put into some perspective. First, it seems overly optimistic to talk of a global civil society when the world system is still

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[24] Recent literature which talks of civil society can over simplify the position of these groups, they are neither necessarily in opposition to states not are they necessarily NGOs. Such simplifications confuse the analysis of society and undervalue the contribution of certain cultural groups (Pelling 1998). The UNDP identifies as examples of these groups: trade unions; non-governmental organisations; gender, language, cultural and religious groups; charities; business associations; social and sports clubs; community development organisations; environmental groups; professional associations; academic and policy institutions; media outlets; and political parties not represented in parliament (UNDP 1997).

[25] "Subpolitics refers to politics outside and beyond the representative institutions of the political system of nation-states" (Beck 1996: 18).

fundamentally barbaric, and when the resources and access to political power of these groups "pale[s] in comparison to the forces driving environmental destruction" (Conca 1995b: 454). Second, these transnational groups are not always 'civil', the U.S. National Rifle Association, for example, has strong links to numerous other countries, and fascism is less than benign. Third, whatever governance may become, it is a present a long way from being firmly rooted in the deliberations of multifarious special interest groups. Thus the UNDP writes that:

> Civil society organisations do not always pursue the qualities of good governance. Nor are they always the most effective development agents. That is why states, while recognising and protecting the democratic rights of civil society organisations, must also ensure that rules of law and values that reflect societal norms are adhered to (UNDP 1997: 22)

The real potential of critical social movements lies in their ability to offer a collective and at times complementary grass roots perspective to nation-states - one which is consistent with global priorities (Elliott 1998). They add radically different streams of advice into the policy making process; Pelling calls this "a corrective influence on the polity" (1998: 11), and Haas (1992) calls it an 'epistemic' function. These groups (and NGOs) have monitoring roles as well (Elliott 1998). They also foster global awareness, dissolve national membranes, and exploit the positive aspects of communications and transport technology. Social movements are for the most 'placeless', and in this sense they transcend the conflation of identity with territory, offering the potential for identity to come from recognising interdependence and the numerous affiliations available to all people. For their part, governments need to create channels to hear these alternative global and local perspectives (see above), and need to commit themselves to implementing this advice. Of course, this would mean actively undermining the authority of the state and breaking the monopoly hold of state bureaucracies on policy advice, but this authority and monopoly contributes to the non-resolution of environmental insecurity.

There are important processes which can enhance bilateral and multilateral transactions between states. Beyond suggesting that these are important for environmental security, it is not the place of this thesis to reiterate the need for, or to describe, these interstate forums and confidence building processes, this is done ably elsewhere (see for example Ball 1991b, Elliott 1998, Haas et al 1993, Payne 1996, Vogler 1995, Young 1989 and 1994).[26] Indeed, this is a key theme of the

[26] However, stressing the importance of these should not obscure the need for other institutions and strategies for providing environmental security - such as individual action,

environmental security literature, and was recognised by Agenda 21 (which was signed by 178 countries).

There are therefore important precedents for interstate interaction on environmental (and peace and development issues). Beyond these formal inter-governmental exchanges there is scope for governments to foster people-people exchanges to strengthen awareness of other cultures and issues in other places (although, to be sure, most cross-cultural interaction occurs without the sponsorship of states). This might take the form of, for example, exchanges between students at all levels, exchanges of people in similar employment roles, exchanges of technical and scientific personnel, exchanges of people from trade unions and indigenous groups, and exchanges of families and households between communities. Such processes, when transpiring in the renewed political context being described here, would enhance the global awareness of people and governments which is necessary for environmental security. This would also promote cross cultural awareness which would help destabilise identity politics, and it would significantly decrease the likelihood of interstate conflict.

11.3.3 Above

It is difficult to talk of what goes on 'above' the state without discussing 'globalisation'.[27] Globalisation is facilitated by advances in transport and communication technologies, and it can be seen in both positive and negative ways. Positive facets are the rise of international non-government organisations and critical social movements; greater international involvement (sometimes) in settling regional conflicts; and treaties, conventions and charters approved by a majority of states prepared under the auspices of the United Nations. On the negative side globalisation involves rampant and rapid transfers of venture capital

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enhancing participation in local and national politics, fostering transnational groups, and so on. The strength of the regime approach is undermined if it excludes alternative strategies (Doran 1995: 194). Saurin warns that an overly narrow focus on regimes and the like can elevate "an ignorance of the vast range of social, cultural and economic processes at work into an essential methodological precondition" (Saurin 1996: 95). He also suggests that "complexity and diversity are marginalised in order to press standard generalised procedures into the service of official state regulation" (Saurin 1996: 95). This, of course, depends in a large part on the nature of 'the state'. A reformulated 'state', as proposed here, is less likely to misappropriate and misconstrue inter-state cooperation on environmental problems in this way.

[27] Globalisation is more an analytical concept than a descriptive term. It does not suggest that common tendencies exist uniformly around the world, but that there are relationships between distanciated people often in very diverse circumstances; it thus "entails the restructuring of the locality through globalised relations of power" (Saurin 1996: 91).

which have the power to make and break fortunes and destabilise currencies. It also involves deregulation of trade and investment through agreements such as the General Agreement on Tariffs and Trade (GATT), the World Trade Organisation, and the impending Multilateral Agreement on Investment (MAI), all of which undermine the capacity of states to protect industries and firms which may be labour intensive or greener than their foreign competitors. This implies an erosion of sovereignty where sovereignty is arguably most needed. Globalisation also means transnational flows of pollutants, drugs, crime, and a widening gap in incomes and capabilities (UNDP 1997). Importantly, those who do not have access to globalisation's facilitating transport and communication technologies are experiencing a new form of deprivation and becoming part of what the UNDP calls a "structural underclass" (UNDP 1997: 25). Thus "globalisation has profound implications for governance the final impact of which we cannot yet determine" (UNDP 1997: 24).

In this new climate the state must strike balances between global influences and global and local responsibilities. The previous discussion has suggested reforms which might assist in meeting the nation's local responsibilities while taking account of global issues. The remainder of this section addresses ways in which a state's global responsibilities can be better met.

It is important not to overstate the importance of global institutions for environmental security. Talking of the 'global', as has repeatedly been suggested, tends to obscure causes and effects, and displace responsibilities. Action for environmental security begins at home. If a prioritised order of this thesis' policy recommendations were necessary, the rule of thumb would be the closer to the ground the more important the implementation. By this token, global level initiates come last in importance, and individual action in the context of global issues (act local think global) is the most important. Further, talking about global institutions runs the risk of proposing to centralise power, which is another reason why power should be dispersed downwards wherever appropriate. It should always be borne in mind that the most basic function of global institutions is to coordinate, not enforce the actions of more localised forms of governance. Indeed, this is true for all institutions of governance above the local level.

The notion of global governance is unavoidable here. Global governance is understood as "systems of rule at all levels of human activity - from the family to

the international organisation - in which the pursuit of goals through the exercise of control has transnational repercussions" (Rosenau 1995b: 13). This does not imply world government, nor does it imply hierarchy as a necessary condition. The preferred term here is *steering*, which highlights a purposefulness of governance without presuming the need for hierarchies (Rosenau 1995b). Thus, in addition to the definition given earlier (section 11.1), governance can be seen as "the process whereby .. a society steers itself, and the dynamics of communication and control are central to that process" (Rosenau 1995b: 14). This notion of steering is consistent with the suggestion, made in the previous paragraph, that the function of more aggregated governance institutions is to coordinate the actions of more localised forms of governance, not least because legitimate governance is more likely to be achieved by bottom-up rather than top-down processes.

Recent work on global governance by the UNDP and the Commission on Global Governance (COGG) embody the notion of common security, but elevate it to a new moral plane. Common security in these projects is about equity, justice, caring, and "a universal moral community" - a significant extension of its original conception as limited cooperation for the purposes of disarmament and war prevention (COGG 1995: 49).[28] The Commission on Global Governance (COGG) suggests that:

> The world community should reassert the importance of tolerance and respect for 'the other': respect for other people, other races, other beliefs, other sexual orientations, other cultures. It must be resolute in upholding these values and offering protection against the actions of those who would trample them. The guiding principle should be that all groups and individuals have a right to live as they see fit so long as they do not violate the coequal rights and liberties of others (COGG 1995: 53).

Consistent with the inclusive approach of this thesis, the COGG suggests that:

> Global governance, once viewed primarily as concerned with intergovernmental relationships, now involves not only governments and intergovernmental institutions but also non-governmental organisations, citizens' movements, transnational corporations, academia, and the mass

[28] *Our Global Neighbourhood* is not without its shortcomings. For example, it has a liberal institutional bias (Knight 1995), and it does not take seriously enough the power of neo-liberal ideology, whose interests the COGG ultimately serves (Broadhead 1996). The most comprehensive and thoughtful critique comes from Baxi (1996), who argues that the COGG talks of values and governance in ways that reinforce the interests of the north at the expense of the south. For Baxi, the COGG's construction of the 'global neighbourhood' is particularly active in this masking of particular interests under the guise of global values. Thus this discussion does not advocate in full the recommendations of the COGG, but treats them with caution and in the context of the broader aims of enhancing true democracy, participation and negotiation. The COGG is nevertheless worth discussing because it is the most prominent of recent semi-official discussions of global governance.

> media... The United nations must play a vital role, but it cannot do all the work. (COGG 1995: 335).

The COGG is in favour of unilateral action to protect the security of people. It suggests that the U.N. has key role to play, not necessarily through the Security Council, but also through agencies such as the U.N. High Commissioner for Refugees and the U.N. High Commissioner for Human Rights. Other international groups such as the International Committee of the Red Cross can also play a part. The international dimension and impartiality of these institutions make them unique. Enhancing the efficacy of these institutions is invaluable to enhancing environmental security. This implies that nation-states should fund and supply personnel to these institutions.

Environmental security requires global governance of this kind. Enhancing good governance throughout the world requires the involvement of intergovernmental international organisations to initiate, advise and assist in the implementation of reforms (UNDP 1997). There is also some scope for these organisations to engage in quasi-enforcement of treaties and conventions (Sands 1993). Intergovernmental international organisations are also valuable for their ability to bring together NGOs, national governments, local governments and other critical social groups, such as was the case at the UNCED and HABITAT II conferences. Global institutions are also necessary for coordinating, developing and monitoring international agreements on the environment; According to the Administrator of the UNDP:

> The continuing deterioration of the environment, and the expanding need to address environmental issues on an international basis, underscore the contribution an international entity can make in developing and monitoring international environmental agreements and promoting international environmental protection and cooperation... We need a strong international body to facilitate the work of the national environmental authorities at the regional and global levels (Speth 1997: 3).

Enhancing good governance as a means to enhance environmental security demands strengthening the United Nations in the short term. However, this is not necessarily an absolute or final precondition for environmental security. First and foremost, strengthening the United Nations means that nation-states pay their dues to the U.N. promptly and in full. Indeed, it suggests that nation-states increase their contributions to the U.N., and, consistent with U.N. objectives, this increase should come from savings acquired through disarmament.[29] The COGG has made

[29] Although it is noted that disarming nuclear, chemical and biological weapons probably means greater expenditure in the short term.

a number of suggestions for U.N. reform which seem valid, including a right for non-state actors to petition the Security Council to bring to its attention situations where the security of people is endangered. It proposes revitalising the General Assembly as the universal forum of the world's states, and strengthening the authority of the International Court of Justice (COGG 1995: 345-7, see also Timoshenko 1989). The COGG also recommends the establishment of a Demilitarisation Fund to help (it says developing) countries reduce military commitments. More polemically, the COGG suggests that (a reformed) Security Council should have a limited but carefully controlled right to intervene in the affairs of a state when it judges that there is a "violation of the security of people so gross and extreme that it requires an international response on humanitarian grounds" (COGG: 90). It suggests also that there be a standing U.N. Volunteer Force of no more than 10,000 personnel which is capable of backing up preventative diplomacy. This is a difficult issue, but this seems a useful strategy for easing the transitional period during which states demilitarise. Further, given that the militarily powerful states are able to do 'peacekeeping' without U.N. sanction (in part because they are integral to effective peacekeeping operations under the present system), a more effective and authoritative U.N. peacekeeping body may better challenge the rogue actions of these states.[30]

The COGG also proposes establishing an Economic Security Council to deliberate and regulate matters pertaining to the global economy. Its tasks would be to provide a long term strategic framework "to promote stable, balanced, and sustainable development"; to ensure that agreed global economic policy goals are adhered to equally by all states; and to offer leadership and consensus on international economic issues (COGG 1995: 342). The COGG also suggests that there be charges on the use of the global commons, including charges for the use of sea lanes, flight lanes, fisheries and possibly a tax on foreign currency transfers (the 'Tobin Tax') (COGG 1995: 343). It is also suggested that a system capable of effectively taxing the activities of multinational corporations be developed (a carbon tax would go a long way here). These seem to be valid recommendations. An Economic Security Council might also implement and steer a unilaterally applied carbon-taxation system so that exported and imported products do not escape penalties or advantages that accrue according to their environmental cost.

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[30] The recent U.S. troop build up in the Persian Gulf, for example, occurred without the explicit endorsement of the U.N. Security Council.

An Economic Security Council might also be an appropriate forum for debt reduction and to elicit and administer unencumbered aid from wealthier countries.

The difficulty with proposing specific councils to deal with economic and military security is that this legitimates the prevailing military and economic concerns that have always dominated the security agenda while ignoring other sources of insecurity. Prioritising economic and military concerns in this way perpetuates the dominance of 'high politics' and implies that other forms of insecurity are of lesser importance. The notion of comprehensive security was proposed to counter this narrow approach. Comprehensive security implies that there needs to be more security councils, particularly ones to deal with environmental security, social security and political security (if we follow Buzan's sectoral approach - see chapter 5), and food security and personal security might also warrant specific councils (if we follow the UNDP's approach - see chapter 10).[31] Alternatively, rather than having a multitude of security councils there might be no security councils, and all matters of security would be referred to the General Assembly. A further option would be to have one, 'human security' council.

If there is merit in adding more voices to political institutions at the nation-state level (as discussed above), then there may equally be much to be gained from similar reforms at the global level. There is an array of possibilities here. Parallel assemblies to the present U.N. General Assembly (of states) could be developed for indigenous people, local governments, youth and NGOs (at least).[32] Each parallel body might then converge at a supra-assembly where global issues are discussed. Alternatively, a reformed General Assembly might allocate a proportion of seats to indigenous people, local governments, youth and NGOs. The rationale is simple, global governance must involve more voices than those of nation-states. This principle should extend into whatever 'security councils' are formed (see above), as security also should not be left to nation-states alone. Furthermore, a more inclusive U.N. would need more diverse input into the operation of the various U.N. agencies (UNEP, UNDP, UNESCO, UNHCR ect..), and again a minimum approach would be to allow indigenous, local government, NGO and

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[31] There is also some merit in the idea of global educative authority to formulate a uniform syllabus of education for students, bureaucracies and commercial organisations throughout the world (Salla et al 1995).

[32] Managing representation here is an obvious difficulty given thousands of possible delegates from each category. The problem is not insurmountable if a degree of imagination and goodwill is applied.

young people to be on the advisory boards of these bodies. As an absolute minimum, women should be equally represented right across the whole of the United Nations organisation.

An important function of global governance is to regulate the environmentally and socially damaging activities of multinational corporations and transnational capital (Redclift 1997b, O'Tuathail et al 1998). The growth of transnational flows of materials and money beyond the immediate purview of states is a novel feature of late modernity, and the difficulties of dealing with this in terms of environmental security cannot be ignored. Nevertheless, the power of these processes and corporations should not be overstated such that the options available to the state are obscured. There are alternatives that arise from a fundamental difference between private multinational corporations and states, which is that states *control space*. This is not often a positive features of states, but it forms the basis of any effective strategy to control multinational corporations and speculators because their activities still occur somewhere in space. The principal difficulty rests not so much in the potential and means of control, but in the need for *unilateral* control across all states. In this sense coordinated and consistent global governance is particularly necessary.

11.3.4 Conclusions

This discussion has outlined ways in which a revitalisation of politics which respects the principles of inclusion and conversation can be implemented within contemporary structures of governance. This is an ambitious task and the discussion should be seen as exploratory. The discussion has argued that there is a need for: expansion of the range of groupings through which people can express their concerns; expansion of the range of forums whereby people can have their concerns heard and acted upon; formalising the involvement of traditionally informal political groups into institutions of governance at all levels from local to global; dissolving the rigid geographic limitations of contemporary political processes in ways that promote greater autonomy over some issues and lesser autonomy over others; synergising the activities of this new polycentric political structures through higher level but subordinate coordinating institutions; and enhancing the capacity to curtail the excesses of private enterprise.

It is tempting to conclude this discussion with a sweeping statement of the policies and institutions of governance necessary for environmental security.

However, the best one can do with any confidence is restate the informing principles required for successful and more legitimate forms of governance, these are: inclusion, conversation, access, equity, and coordinated (not enforced) bottom up processes of reform. Beyond this, all that might be said is that the issue of governance needs further investigation; this, then, is "an unfinished story" (Rosenau 1995b: 39).

11.4 Conclusions

This chapter has made a preliminary exploration of the implications for politics, policy and governance of the human-centred environmental security concept proposed in chapter 10. Its exploration has been concerned with revitalised politics and institutions for better governance, arguing that detailed policy measures likely to be successful are already available, and that the more pressing deficiency lies in the failure of contemporary politics and institutions to implement these changes. The chapter has sought to cover a broad array of approaches, discussed in an approximate order of priority from individual action through to global level reforms. It has argued that individuals acting as conscious agents can transform the system to enhance environmental security, and that there is a triple motivation for this agency, namely the responsibility to others, the pursuit of true happiness and satisfaction, and the recovery of personal identity and ontological security. Within this broader life politics context, it then becomes possible to talk of meaningful and pragmatic reform of political institutions. The chapter has advocated a range of policies designed to foster a polycentric governance system which is determined by people acting in an enhanced democratic environment. It has also argued that with this polycentricity and reinvigorated politics comes a greater need for coordination, and to this end there needs to be equally democratic and inclusive institutions which facilitate this coordination and assist in fostering the desired reforms. These proposals advance the implementation of the new politics necessary for environmental security. Although the proposals of this chapter do not by any means address all the processes of modernity which generate insecurity (chapter 3), it is possible to see the meta-intent of this chapter - to allow people to take control of their lives - as the necessary first step to overcome the negative features of modernity.

Chapter 12. (In)Conclusions

12.1 Introduction

Conclusions tend to narrow a piece of research into an inadequate but digestible set of outcomes. True to form, this concluding chapter summarises the principal outcomes and contributions of this thesis, it revisits its aim, and it suggests some ways in which further research can advance environmental security. Conclusions also imply closure, but the deeper function of this thesis, and one which evades proper capture in this chapter, is to open up the study of environmental security by thinking critically about existing approaches, and thinking inventively about alternative possibilities. Thus it is the (in)conclusions and latent possibilities of this entire thesis that the reader may find more stimulating, and these are for the reader to discern according to their own predilections. It is hoped that the reader, regardless of perspective, has found something of interest herein.

It is important to recognise that writing and reading are acts of communication which are never perfect, but can nevertheless be improved by a commitment to clarity and transparency on the part of the author, and an attentive and open-minded approach by the reader. This thesis has sought to be clear and transparent, and this goal is carried through to the end of this chapter. Readers will of course interpret and learn from this thesis according to their own perspective, and may find interest in aspects of it that the author does not. Nevertheless, it is hoped that by the end of this chapter it will be apparent what this thesis claims to have done.

12.2 Review

The explicit overarching aim of this thesis was to critically examine the concept of environmental security. It is therefore necessary to explain how this has been fulfilled as this is presumably the minimum criteria for assessment, although it is hoped that the value of this dissertation will not be judged by this criteria alone. The proliferation of *ad-hoc* and divergent approaches to environmental security make a comprehensive and critical examination of the concept timely. Such an examination is also warranted because environmental security increasingly

appears in policy-discourse, particularly in the United States. Finally, an examination such as this might assist in the development of an environmental security concept that offers something new to the broader goal of the peaceful resolution of environmental problems. This overarching aim was to be satisfied by meeting a number of specific requirements.

The first requirement to meet this thesis' overarching aim was to establish the particular problem that concerns this thesis. This is necessary because in most accounts of environmental security the problem is implicit in the answer, rather than clearly stated at the outset. Clearly establishing the problem in this particular way is therefore an original contribution, and serves as a firm basis for the subsequent examination of concept of environmental security.

Axiomatic as it may seem, environmental security should be seen as the response to the problem of environmental insecurity. Chapter 1 proposed a humanistic understanding of environmental insecurity as the vulnerability of people to the effects of environmental degradation. Environmental insecurity was understood as a double injustice arising from economic processes that create poverty, and the subsequent environmental degradation and exacerbated vulnerability that results from these processes. Environmental insecurity, then, is when already vulnerable people become more vulnerable due to environmental degradation. More broadly, environmental insecurity is the condition of unstable and declining trends in human health and welfare.

The second requirement was to outline the particular critical approach this thesis adopts to the subject of environmental security. This was necessary to make clear the presuppositions and values this thesis holds. It also contributes to this thesis' goal of transparency, and provides a useful starting point to the examination of environmental security. Satisfying this second requirement was the function of chapter 2, the first chapter in Part I of this thesis.

The particular critical approach developed in chapter 2 draws on the Critical Theory of the Frankfurt School, feminist theory, poststructuralist theory, and Green theory (further discussion of these can be found in appendix I). Some features more or less common to of all these critical perspectives were elicited, and these formed the basis of this thesis' critical green approach. These include: an open declaration of the values informing a study and a consistent adherence to these values; a dialectical perspective; an appreciation and regard for history; a

positive view of human nature and an emancipatory intent; an holistic and interdisciplinary approach; and a concern for imagination and utopianism. Chapter 2 also discussed the normative concern of this thesis which is encapsulated in the notion of peace.

It is not for this thesis to assess the contribution of chapter 2 to either critical environmental politics or critical scholarship more generally. It is hoped, though, that it has shed some light on the difficult problem of linking the Green perspective with other critical perspectives.

The third requirement to satisfy this thesis' overarching aim was to understand the evolution of environmental insecurity. This is consistent with the critical regard for history, and necessary to appreciate the nature and origins of contemporary insecurity such that existing responses can be appraised, and historically aware solutions proposed. Chapter 3 has sought to fulfil this third requirement - remembering that history is a big place!

Chapter 3 offers a broad and sweeping meta-history, and while too brief to do justice to the task, it has sought to elicit some key themes which explain contemporary environmental insecurity. The principal lessons from this historical analysis are that population, energy use, social disaggregation, structural and direct violence, and environmental degradation - all of which contribute to environmental insecurity - have grown exponentially over time. The particular history presented in chapter 3 can be seen as a progression from a state where 'peace' was unthinkable given the general absence of direct and structural violence, to a state where violence of both kinds is rife and peace therefore becomes a master metaphor for the Good life.

In the earliest and longest hunter-gatherer phase of human history, humans lived close to nature, their activities were environmentally sustainable, social life was characterised by close and interdependent relationships with the immediate in-group, and basic health and social needs were fulfilled. Insecurities took the form of the risks associated with the intimate interaction with nature. With the advent of agriculture, humans gradually came to live in more settled groups, population slowly increased, and there was a more regular and reliable supply of food. However, with greater dependence on single crops for food came greater vulnerability to natural perturbations. Over time an agricultural surplus was produced which, in conjunction with other factors, gave rise to the first cities. The

survival of the city depended on sophisticated hierarchies of domination and exploitation to ensure a sufficient supply of food. With the city came organised warfare, and larger scale agriculture meant more intense forms of environmental degradation. Late in this early urban phase Europeans began to colonise the world and bring diverse peoples and environs under their control. With the advent of the industrial revolution fossil fuel use and the human population increased at a massive rate. Modern society is characterised by: industrialism; capitalism; a heavy dependent on fossil fuels; the legitimate use of increasingly destructive force by the state; the increase in consumption of luxury items; the oppression and impoverishment of millions - later billions - of people; the rise of instrumental reason and the sublimation of tradition; and the widespread and in some circumstances global spread of environmental degradation. All of these are, directly or indirectly, sources of environmental insecurity.

Over the course of this history the locus of insecurity shifted from being rooted in nature to being rooted in humanity itself. In today's late modern era, the risks humans pose to themselves and other humans, and by the damage we have wrought upon nature, combine to produce multitudinous forms of insecurity, including environmental insecurity. Nevertheless, the positive lesson is that throughout history humans have learned to adapt, often peacefully, to changing circumstances. This offers hope that in this late modern era we can once again adapt and meet the basic needs of all people in all places.

This particular account of the history of insecurity is unique, as an historical perspective is almost completely absent in the environmental security literature, and because it uses insecurity as the interpretive theme.

Chapters 2 and 3 comprise Part I of this thesis. These chapters established a firm theoretical and historical starting point for the more detailed examination of environmental security that occurs in Part II. Rather than establishing this theoretical and historical beginning in a dry and uncontentious manner, Part I has sought instead to delve deep into these issues in an exploratory and polemical manner. This serves to make the account more interesting and challenging, and hopefully it offers a rich source for future debate and research.

The fourth requirement was to explore the meaning of security. This is necessary as security *per se* is integral to environmental security. Chapter 4, the first chapter in Part II of this thesis, sought to satisfy this requirement by

discussing the concept of security in general terms, and then discussing and critiquing the dominant Realist approach to security which has conditioned most accounts of environmental security. The claim of this chapter was that security understood as the security of the nation-state, and procured through military power, undermines the security of the people the state purports to protect. The resonances of this Realist approach are evident in many discussions of environmental security. Chapter 4 makes no pretence to originality.

The fifth requirement was to understand the origins of the concept of environmental security. This is important for any comprehensive and critical examination of the concept. Chapter 5 sought to meet this requirement by discussing efforts to extend and modify the dominant Realist approach, as it was from these efforts that the concept of environmental security emerged. The argument of this chapter was that these efforts to expand the meaning of security did not modify the dominant Realist approach, but were instead appropriated and incorporated into it.

This chapter can not honestly claim to make an original contribution to the literature. However, reviewing the historical origins of the concept of environmental security in this way offers important lessons for the politics of security discourse, and it is necessary if this thesis' aim to conduct a critical examination of environmental security is to be properly satisfied.

The sixth requirement to meet this thesis' overarching aim was to critically appraise the argument(s) that environmental degradation will induce violent conflict. This is necessary as these environment-conflict arguments dominate the environmental security literature. Meeting this requirement was the function of chapter 6.

The literature considers that depletion and contamination of various 'resources', as well as rapid population growth, will induce violent conflict. This thesis has argued that this preoccupation with violent conflict reflects the particular (not essential) Realist ontology which assumes that people will naturally resort to violence rather than cooperate in times of stress. It is also a product of an imperfect reading of history, and this literature fails to adequately grasp the differences between resource and environmental problems. Further, this research leads to the militarisation of environmental issues, and it obscures recognition of the day-to-day environmental insecurities experienced by people. Focusing on

negative peace in this way obscures the broader and more pervasive need for positive peace. A more productive research agenda would be to explore instances where people have cooperated peacefully in times of scarcity. There are few systematic and critical discussions of these environment-conflict arguments, and none as comprehensive as that presented in chapter 6.

The seventh requirement was to examine existing policy manifestations of environmental security. This is necessary to gain a better appreciation of how the concept has been interpreted and deployed by the nation-state which is (in modernity) the dominant purveyor of security, and which is integral to efforts to overcome environmental insecurity. Fulfilling this requirement was the function of chapter 7, which began by discussing environmental security as a national security phenomena, and then focused on the policy initiatives of the United States.

The examination of U.S. environmental security policy-discourse found that environmental security has been interpreted and deployed in ways that legitimise traditional security practices. U.S. environmental security policy-discourse understands environmental security to be the military defence of the inside against an existentially threatening outside; there is little to suggest that the insecurity of people is of genuine concern. The lesson of this examination of U.S. environmental security policy is that unless a more competitive account of environmental security is developed, and one which has a readily available set of policy options, the concept will continue to be used to perpetuate the security establishment. This is not to say that a more resolute conceptualisation can totally prevent the appropriation of environmental security, but it is to say that it can contest the concept more effectively to (hopefully) affect a shift in its meaning and practice. This is undoubtedly the most extensive critical discussion of U.S. environmental security policy.

The eighth requirement was to examine the connections between the military and the environment. This is necessary as the military is the dominant agent of security in modern (formal) politics, and because much of the environmental security literature makes connections between the military and the environment. Chapter 8 sought to meet this requirement.

Chapter 8 discussed the rather obvious point that war causes environmental degradation. It then discussed the way in which military preparations for war degrade the environment, and agreed with much of the literature that the military

is indeed a significant cause of environmental insecurity. More significantly, the difficult question of whether militaries may have a positive role to play in enhancing environmental security was considered. The response to this question was a tentative and qualified 'yes'; the argument being that the military may have a positive contribution by engaging in non-core and non-coercive activities which have a direct and observable positive environmental outcome. This finding should not be presented without its attending caveats. Tackling the role of the military cuts to the core of the positive/negative peace dilemma, and the proposal to cautiously involve the military in environmental restoration seeks to affect a shift from a negative to a positive peace role for the military. The real benefit to flow from this involvement is that it may serve as a transitional step towards conversion of the military. This latter discussion is the most extensive and arguably the most reasoned of all efforts to consider the role of the military in relation to environmental issues.

The ninth requirement to meet this thesis' overarching aim was to examine the notion of ecological - as opposed to environmental - security. This was the function of chapter 9. An examination of ecological security is necessary as it seems to present a different approach to the connections between security and the environment.

Chapter 9 began with a review of the literature which talks in terms of ecological security. The difficulty of distinguishing between 'ecological' and 'environmental' security in the literature was noted, and making this distinction clearer was another function of this chapter. The chapter applied ecological theory to security, and it argued that resilience and diversity can be metaphors for a more positive approach to security. Chapter 9 discussed the difficult issue of sovereignty and ecology, and it tentatively suggested that rather than attempting to rethink sovereignty, it is perhaps better to rethink the meaning and practice of politics more generally. Chapter 9 also presented and applied a framework for identifying ecological security problems. These are widespread and long-lived ecological disturbances which contribute to environmental insecurity; they include climate change, biodiversity loss, and accidental releases from nuclear power stations.

Chapter 9 argued that despite its many merits, the concept of ecological security is less effective than that of environmental security in that environmental security has a certain intuitive resonance and it speaks to the prevailing Realist

approach to security in a way that offers the possibility of dialogue, contestation and potential reform. Ecological security does not do this. Therefore, it was proposed that the better strategy is to persevere with environmental security, but to incorporate the themes of ecological security into a reformulated human-centred environmental security concept. This chapter makes a modest contribution to the literature.

Chapter 4 to 9 comprise Part II of this thesis. Together they provide a detailed critical examination of existing approaches to environmental security. On the basis of the limitations of existing approaches identified in these chapters, Part III of this thesis reformulated the concept of environmental security and explored the implications of this for politics, policy, and governance.

The tenth requirement to meet this thesis' overarching aim was to propose a concept of environmental security that overcomes the limitations of existing approaches. This was the function of chapter 10, the first chapter in Part III of this thesis. It was argued that environmental security needs to be human-centred, peace-oriented, and adaptive to change in order to overcome the limitations (and omissions) of existing approaches. A human-centred environmental security concept combines the interests of peace and the environment, and it contests and contrasts with the dominant nation-centred and conflict-oriented approach. It also serves as an alternative paradigm from which new understandings and responses to environmental problems may emerge.

Chapter 10 began by reviewing the literature which seeks to reclaim security to serve the needs and aspirations of people. This offered important lessons of relevance to the human-centred environmental security concept which was then proposed. This concept seeks to be true to the norm of positive peace. The highest priority of such an approach, it was argued, should be to enhance the security of those people most vulnerable to environmental degradation. The human-centred approach is based on the notions of risk and resilience. Such an approach makes clear that positive peace is integral to achieving environmental security. This approach does not concern itself with the possibility that environmental degradation may induce violent conflicts, nor does it concern itself with national security. In this account people are the first and overriding security referent.

A definition of environmental security was proposed. The features of this were human security (expressed as less vulnerability/more resilience);

environmental security as an adaptive process; and the need to treat the root causes of human vulnerability (the processes which induce environmental degradation). The definition was justified by answering key questions associated with security (whose security? - security from what? - and insecurity how?), and by answering some questions posed in the literature. It was argued that this human-centred approach to environmental security differs from other environmental discourses as it strongly emphasises the need to meet basic needs ahead of any other societal need, it explores the linkages between peace and the environment, it addresses the juncture of foreign policy and the environment, it addresses the role of the military, and it adds a significant political dimension to environmental issues. These are perhaps not unique in and of themselves, however the particular combination makes environmental security (so conceived) a useful alternative concept for understanding and posing solutions to environmental problems.

Chapter 10 also reasserted that environmental security is useful for the way it challenges the meaning and practice of security. Implicit in the concept is the idea that environmental problems are security issues which warrant extraordinary responses from government, because providing security is the highest purpose of government. In this account, it is human security that governments should be making every effort to address. Chapter 10 has made a significant contribution the literature. It has developed a consistent and peace-promoting account of environmental security that differs considerably from, and offers a viable alternative to, prevailing approaches.

The eleventh requirement was to discuss the implications of the human-centred environmental security concept for politics, policy, and governance. This is necessary as the value of a new concept in part lies in the suggestions it generates. Further, this discussion is justified by the recognition that to be effective critical security studies must move beyond critiques of the politics of security discourse, and start addressing the political requirements for security. Chapter 11 sought to satisfy this last requirement.

Chapter 11 did not seek to propose detailed policy measures, arguing that these are available elsewhere. Instead, it argued that the failure to provide environmental security stems from failures in contemporary politics and governance. The role of individuals as agents of security was given considerable attention. It was argued that people, mostly in the industrialised countries, have

three motivations to act as conscious political agents: for the benefit of others; for the satisfaction of genuine needs; and to secure their identity and give meaning to their lives. Such action can reform existing institutions that generate environmental insecurity. This action can take many forms, including consuming less and actively engaging in formal and informal political processes. Consuming less and consuming smarter, for example, undermines and reshapes the capitalist economy, and participating in a diverse array of political forums enhances the processes of governance and strengthens social resilience.

The implications of the human-centred approach to environmental security for national policy were then considered. The most important recommendation was to listen to, and act on, the interests of the most vulnerable. A range of measures were proposed to enhance good governance for environmental security. These were informed by the need for greater inclusion of alternative perspectives, greater dialogue and conversation about political priorities, and the need for institutions that respect processes as much as outcomes. It was suggested that these principles could be achieved through a more polycentric and scale varied system of governance in which women are equally represented, and which includes social movements, indigenous people, local governments, young people, and trade unions. Greater accommodation of diverse perspectives into process-oriented and consensus-based systems of governance helps protect the social diversity necessary for just, flexible, and resilient (therefore secure) societies.

Chapter 11 makes an important contribution to the literature by proposing a set of recommendations for political practice which are consistent with the need people have for environmental security. These recommendations are consistent with theories about good governance and better democracy, and are confirmed by practices of environmental governance in Australia. They also offer a different approach to the problem of global politics by focusing on governance rather than on the difficulties associated with sovereignty. Moving beyond a critical perspective means taking risks and proposing changes. There are no easy answers to these questions of politics, policy, and governance, and the real value of this chapter lies in the future research and dialogue that it might provoke.

To be thorough and to act as a stimulus to further dialogue, a critical security project should have three parts: it should identify its particular critical approach and its position as a subject, and ideally it should explain the historical context in which it situates itself (Part I); it should provide a critique of the existing meaning and practice of security, and in this case environmental security (Part II); and on the basis of this it should offer its own reformulation of security and link this to political practice (Part III). This thesis has satisfied these requirements.

Ultimately it is up to the reader to determine whether the overarching aim of conducting a critical examination of environmental security has been sufficiently achieved. It is the contention of the author though, that by defining the problem at the outset; by adopting a critical perspective; by proposing a history of environmental insecurity; by examining the dominant approach to security; by examining the origins of environmental security; by examining the idea of environmentally induced conflicts; by examining existing environmental security policies; by thoughtfully engaging with the linkages between the military and environmental degradation; by discussing the notion of ecological security; and by proposing an alternative approach to environmental security and proposing a range of actions consistent with this - this thesis can reasonably be said to have satisfied this overarching aim.

The meta-outcome of this thesis has been the development of a critically informed and positive peace-promoting environmental security concept, including suggestions for how this can be put into practice. This differs significantly from the political Realist, nation-centred, militaristic and negative peace approaches that currently dominate the meaning and practice of environmental security. It is hoped that this reformulated and more resolute conceptualisation can better contest and therefore change the meaning and practice of environmental security, and indeed security more generally.

12.3 Environmental Security: Now What?

The last task of this dissertation is to suggest areas for further research to advance the meaning and practice of environmental (human) security. This discussion is not concerned with the ability of particular disciplines to contribute to this research agenda. Instead, it outlines the general areas warranting further exploration, believing that a problem-oriented approach is the best way to overcome disciplinary specialisation and foster integrative and innovative research.

This thesis has argued that environmental security securitises environmental problems, thereby making them more important than other mainstream political issues. This is a double edged sword; securitising environmental issues runs the risk that the Realism will co-opt and colonise the environmental agenda rather than respond positively to environmental problems; alternatively, environmental security can contest the legitimacy of the Realist approach to security and highlight its contradictions. It is the contention of this thesis that the latter function justifies the risk of co-optation, particularly given that the concept has by-and-large been co-opted anyway. If environmental problems can be securitised in a way that challenges the Realist paradigm yet has currency with policy discourse, national governments may well take environmental problems more seriously, reduce defence budgets, and implement policies for a more peaceful and environmentally secure world. This thesis has argued that for environmental security to contest the Realist approach in this way, and for it to offer useful policy advice, it needs to be framed in terms of *human* security.

This thesis has thought through the politics of security discourse as it relates to the environment. It has determined that environmental security is a risky venture, but one worth pursuing. The greatest risk, perhaps, is that Realist security discourse abandons the use of environmental security altogether, thereby ending the discursive contest. Until such time, there a need for ongoing and obstinate contestation of the meaning and practice of security and environmental security. There are, as in this thesis, three components to this. First, there is a need for continued development of theories and historical explanations which can serve as solid foundations for a human-centred environmental security concept, and which can enhance critique and contestation. Second, and contingent upon the former, there is a need for ongoing critique of existing theories and practices of security

and environmental security. This can be done, for example, through a framework of questions (whose security? - security from what? - insecurity how? - why security?); and by exposing contradictions between the alleged benefits of the theory and practice of environmental security and the reality of environmental insecurity. Third, and contingent upon the first two components, there is a need to posit alternative theories and concepts, and to link these to practice. In general, the critique of security and (after this thesis) environmental security is well developed, and so the challenges lie more in developing the foundations and advancing the alternatives. The remainder of this discussion provides thoughts on ways to enhance the contestation of the meaning and practice of security and environmental security according to these three components.

Enhancing the foundations

Integral to the need for further critical research is the refinement and development of more explanatory modes of critical thought. It is the contention of this thesis that one way in which this might be done is to think freely about what is common to various critical approaches, and to more constructively link the insights and strategies of these. This calls for an honest and (dare it be said) 'communicatively rational' dialogue between advocates of critical and emancipatory theories. This, however, is no easy task.

There is also a pressing need for alternative histories. The contention of this thesis is that history tends to support an atomistic and negative ontology of human nature, because history tends to be a ledger of anomalous episodes of conflict - which can be read as proof that humans are predisposed to violence. It is thus the silences of history - the more proliferate instances of negotiation and cooperation - that need to be found and asserted as these offer a basis of hope and lessons for strategies to provide peace and security. This calls for extensive projects on both 'peace histories' and 'environmental histories'.

Enhancing the critique

Security as territorial integrity determines national identity by delineating threatening Others. This is an inherently violent form of identity creation which justifies militarism and complements exploitative capitalist modes of exchange; it entrenches a competitive and hostile view of the world. In such a world there can be no unilateral action to protect people and the environment. There is therefore a

need to dissolve this state centrism and crude identity politics. The challenge is to construct multiple 'maps' that show the dimensions and spectrums of other political, ecological, social, economic and cultural spaces and processes; these can highlight the limitations of Realism's two-dimensional view of the world. If the individual and social groups can appreciate the multiple forms of affiliation that are available to them, then this might serve as a positive source of identity creation which embraces the global community and breaks down the distinction between Us and Other. Expanding awareness of the complexity and connectivity of the world will help dissolve the tendency to ascribe threats, risks and dangers to Others. We may then appreciate that in life there will always be insecurity and risk, but violence rarely - if ever - provides security. In short, there is a need to demonstrate interdependence.

Scholarship of a critical nature clearly has a key role to play in enhancing environmental security. The basic function of critical scholarship is to open up thinking space and to generate alternatives. More specifically for environmental security, critical scholarship has to continually unmask discourses which construct an ethnocentric and essential account of 'reality' and identity which in turn lead to practices which exclude and oppress people who lie outside the frame of reference. There is a need to continually challenge simplistic responses to complex problems. It is also necessary to continue to challenge the presumption that economic forces are beyond political control. Further, it is necessary to continue to contest singular representations of words like security, as it is through such discursive contestations that malignant discourses can be critiqued and benign alternatives proposed in the hope of affecting a shift from malignant to benign practices.

There is a normative element to this thesis' critique. An explicitly normative style of argumentation is rare in the security literature, but does seem to be a valid and constructive technique of critique. In addition, normative argumentation is more conducive to the generation of alternative and positive concepts and recommendations for change. Part of the reluctance to engage in normative theory, one suspects, is its problematisation by relativist forms of postmodern theory, where to argue on the basis of a notion of the Good is seen to be an argument in favour of singular and therefore exclusionary prescriptions which cannot possibly be Good for all people (see Appendix I, section 6). It is ironic, but probably fair to say that the postmodern turn has helped protect violent theories and practices such as Realism from criticism, because it is now difficult to say that these are Bad in

the absence of a sense of the Good. It is at this juncture that a key message of this thesis applies - that is that politics should be the discursive or dialogical negotiation of the Good; to wit, the Good is not singly determined but continuously consensually derived (see chapter 11). However, the absence of a stable and universal Good does not mean that there is an absence of things that are more or less Bad. Indeed, that violent theories such as Realism (and neo-liberalism) exclude alternative voices, impose their will upon others, and affect material oppression, these theories and practices are Bad by virtue of the way they suppress the *possibility* of a democratically and consensually determined Good. So, normative critique is still possible, but normative critique, like all forms of critique, requires a deep level of awareness of the context, the implications and the responsibilities that are involved in arguing against, and for, certain theories, discourses and practices. As a final thought on the matter, normative critique enables a sense of optimism, and a capacity for obstinance. These are both required if the meaning and practice of security and environmental security are to be changed.

Enhancing the theory and practice of environmental security for people

In order to enhance the robustness of its human centred concept of environmental security, this thesis has drawn on ecological theory, risks and hazards literature, and existing approaches to environmental management and policy. Its understanding of these is perhaps cursory, however it has shown that there is a degree of confluence between these. This points to a substantial research agenda of enhancing the theory and practice of environmental security by integrating perspectives from ecological theory, risks and hazards, and environmental management and policy. More generally, these may offer important lessons for the theory and practice of positive peace.

There is a substantial amount of literature which looks at disruptions to local environments and the ways these may induce conflict (discussed in chapter 6). What is absent is consideration of the day-to-day insecurities that people face, and the broader global economic processes that in many direct and indirect ways generate environmental insecurity. If we are to better understand the phenomenon of environmental insecurity then it is these routine impacts of global processes that must be further investigated. Development studies has already provided many valuable lessons here, but this is a challenging area and our understanding is not

fully complete. A useful research strategy would be to conduct a series of case studies of environmental insecurity across a diverse range of places and cultures in an attempt to explicate both common and particular causes. As an immediate task, the lessons of similar types of analysis that are already available could be described in the language of security such that the global-local mechanisms which generate insecurity could be brought to the fore of security discourse.

A more necessary research task is to demonstrate how people cope with vulnerability and scarcity in *peaceful* ways. This is the inverse of the case studies of violent conflict discussed in chapter 6. If we are serious about peace then we should learn from instances of peace. A case study approach such as suggested in the previous paragraph might help elicit what is common to the many cases where people have responded non-violently to externally derived but locally felt environmental insecurity. The lessons distilled from these case studies could then be applied to cases where communication and cooperative arrangements for peace and sustainable development have broken down. A challenge for environmental security, then, is to learn from instances of cooperation rather than focusing on instances of violent conflict.

This thesis can be read as a sustained exploration of the relationship between peace and environmental degradation. It has argued that environmental degradation is a function of structural violence, and that the construction of environmental problems as requiring defence against Others leads to the perpetuation of the same forms of violence responsible for environmental degradation. Inverting the discussion, it is the contention of this thesis that positive peace is the best means to achieve environmental security. However, the various connections between peace and environmental degradation need to be more fully explored. One particularly fruitful area for research would be to investigate the possibility that common environmental problems can provide a basis for the resolution of long-standing social and political conflicts. As an example, water scarcity seems to be a particularly valuable basis upon which to build peace - as the case of the Okavango River, shared by Angola, Botswana and Namibia seems to suggest (chapter 6). Such a research strategy may pave the way for turning strategies for negative peace into strategies for positive peace. In short, there is a need to prove not just that peace is necessary for environmental security, but that resolving environmental problems can forge peace.

Beyond this applied approach to peace-environment connections, there is scope for more theoretical investigation as well. A challenging but likely rewarding area of research lies in the linkages between ecological theory and peace - linkages which this thesis has barely begun to explore (chapter 9). What this thesis has done is to prove that there is sufficient resonance between ecological theory and a politics of peace and security to warrant further investigation. Further, investigation of this kind may offer extremely valuable insights for Green theory, and indeed for all dialectically-oriented theories. The difficulties of such a research agenda lie in tentative nature of ecological theory, and in the tendency for social and political theorists to simplify, misconstrue and misappropriate these tentative theories. The best short-term strategy to advance the relation between ecology and a politics of peace is to convene a series of exploratory and interdisciplinary workshops, and to publish their findings. One important outcome of this would be to increase the population ecologists' awareness of the social sciences and humanities, and conversely, to increase the social sciences' and humanities' awareness of ecological theory.

A particular limitation of critical scholarship is the difficulty that it has in informing policy and posing genuine alternative courses of action. This limitation is no doubt evident in this thesis. It is difficult to move quickly from a critical to a prescriptive mode, indeed the latter almost seems to be anathema to the former. However valuable the contribution of critical perspectives, it is nevertheless important to talk about the immediate needs for a better future. In the absence of critically informed prescriptions, *ad hoc* and ideologically laden measures are proposed, and these tend perpetuate the status quo. So, critical research must say more about positive changes that are needed now in order to achieve a more secure future. Bearing this in mind, this thesis has attempted to say what may be necessary to achieve environmental security given the limitations of existing approaches thus far. It has argued that a peaceful and secure future requires the involvement of all people in the determination and implementation of the Good. It would be presumptuous to describe the discussion in chapter 11 as anything other than exploratory. It is therefore open to debate, and indeed should be debated.

A contention of this thesis is that generally satisfactory policies are available in various international agreements and conventions on the environment, development, and population. In addition to these, this thesis has added that there is a need to creatively and constructively engage with the military, and it was

suggested that this might be done through careful involvement of the military in environmental restoration and (non-coercive) protection. There is clearly enormous scope for further research to develop specific programs in which the military might be involved.

This thesis has argued that environmental insecurity stems from a failure of politics and governance. To this end the most important research agenda of all is to find ways to revitalise politics, and to design a polycentric, scale varied, coordinated system of governance that is flexible and represents all people. This is an extremely difficult and challenging task; it is also most urgent.

In the final analysis, enhancing environmental security involves no less than overcoming the negative aspects of modernity. This means thinking seriously about the nation-state and ways to reform it. It means resolving difficult issues to do with politics, democracy, justice, freedom, responsibility, diversity, reason, ethics, communication, and the situating and scaling of legitimate institutions of governance. This will not be easy, but if it has done nothing else, hopefully this thesis has shown that an environmentally secure future is still a possibility.

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